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ABSTRACT

The data presented in this report show trends in doctorate production by science and engineering (S&E) field and recipient characteristics, institutions awarding doctorates, and postgraduation plans of recipients. The data comes from the Survey of Earned Doctorates (SED), which is conducted annually. Doctoral degrees such as the Ph.D. or D.Sc. are included in these surveys, but first-professional degrees such as the J.D. or M.D. are not. Data from the SED are collected directly from the individual doctorate recipients. Approximately 94% of the annual cohort of doctorate recipients responded to the questionnaire, which is distributed to them through the cooperation of the Graduate Deans. (PR)

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Selected Data on Science and Engineering Doctorate Awards: 1991

Science and Engineering Education and
Human Resources Program
Division of Science Resources Studies
National Science Foundation

92-309

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Selected Data on Science and Engineering Doctorate Awards: 1991

April 1992

Project Officer: Susan T. Hill

Science and Engineering Education and
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General Notes

The data presented in this report are being released in advance of the publication containing more comprehensive data, all of which were derived from the Survey of Earned Doctorates (SED). They show trends in doctorate production by science and engineering (S&E) field and recipient characteristics, institutions awarding doctorates, and postgraduation plans of recipients.

The SED is conducted annually for the National Science Foundation (NSF) and other Federal agencies by the National Research Council. Information from this survey becomes part of the Doctorate Records File, which is a census of doctorates awarded since 1920 by regionally-accredited universities and colleges. Doctoral degrees such as the Ph.D. or D. Sc. are included in these surveys, but first-professional degrees such as the J.D. or M.D. are not.

Data for the SED are collected directly from the individual doctorate recipients. Approximately 94 percent of the annual cohort of doctorate recipients responded to the questionnaire, which is distributed to them through the cooperation of the Graduate Deans. Partial data from public sources are added to the file for nonrespondents; therefore complete counts are presented for conferred doctorates by field of study and sex of recipient. The data for a given year include all doctorates awarded in the 12-month period ending on June 30 of that year.

These tables present detailed data on (S&E) doctorates recipients, with some totals provided for non-S&E fields. Detailed data on non-S&E fields are published by the National Research Council and by other Federal sponsors of the Survey of Earned Doctorates. The groupings of field specialties into broad fields may differ among the sponsoring agencies according to their missions.

Additional detailed tabulations will be available soon. For further information on the availability of data for S&E doctorate recipients, please contact the Science Resource Analyst concerned:

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Table 1. Science and engineering (S&E) doctorates awarded, by subfield: 1981-91

Subfield	Year of doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TOTAL, S&E	17,996	18,017	18,393	18,514	18,712	19,251	19,706	20,739	21,530	22,677	23,748
TOTAL, SCIENCES	15,468	15,371	15,612	15,601	15,546	15,875	15,994	16,551	16,986	17,784	18,536
PHYSICAL SCIENCES	2,627	2,694	2,802	2,845	2,916	3,090	3,212	3,317	3,244	3,492	3,602
Physics/astronomy	1,015	1,014	1,043	1,080	1,080	1,187	1,237	1,302	1,274	1,392	1,408
Acoustics	13	11	14	21	10	15	17	16	15	21	12
Astronomy	50	52	50	42	43	52	46	66	49	52	50
Astrophysics	59	50	65	56	57	57	54	64	64	76	75
Atomic/molecular	66	96	71	77	58	70	79	77	74	87	76
Electron(1)	-	-	1	2	4	2	6	2	4	2	1
Elementary particle	119	119	136	138	154	147	159	174	135	163	182
Fluids	14	13	15	11	16	6	21	17	14	17	14
Nuclear(2)	63	53	90	72	86	89	74	88	81	73	66
Optics	54	42	50	53	51	58	50	65	78	76	84
Plasma	65	69	72	73	55	61	72	65	61	42	58
Polymer(3)	-	-	10	8	11	11	15	20	7	11	17
Solid state	253	235	222	258	248	280	287	252	296	306	371
Thermal(4)	7	-	-	-	-	-	-	-	-	-	-
Physics, general	164	167	150	170	176	222	238	271	269	323	247
Physics, other	88	107	97	99	111	117	119	125	127	143	155
Chemistry	1,612	1,680	1,759	1,765	1,836	1,903	1,975	2,015	1,970	2,100	2,194
Analytical	229	190	264	228	285	257	314	301	289	293	303
Inorganic	188	226	215	233	251	260	240	250	256	242	259
Nuclear	12	20	13	18	7	18	13	7	6	13	14
Organic	494	519	503	525	494	511	511	531	511	452	537
Pharmaceutical	52	55	78	56	60	58	65	73	64	48	82
Physical	275	324	311	329	304	293	302	318	310	325	363
Polymer	62	50	62	63	84	72	96	81	78	81	111
Theoretical	33	32	48	37	48	41	46	50	46	55	45
Chemistry, general	193	175	177	183	213	289	297	310	312	524	407
Chemistry, other	74	89	88	93	90	104	91	94	98	67	73

See footnotes at end of table.

Table 1. Science and engineering (S&E) doctorates awarded, by subfield: 1981-91--continued

Subfield	Year of doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
EARTH, ATMOS, & OCEAN SCI	583	657	637	614	617	589	628	728	740	769	837
Applied geology(5)	21	25	8	7	8	4	5	7	6	6	1
Atmos/meteorol sci, gen(3)	-	-	16	5	10	7	16	14	14	23	26
Atmos/meteorol sci, other	33	26	27	12	10	7	13	10	15	2	10
Atmospheric dynamics	27	22	16	25	21	16	17	25	16	20	21
Atmospheric phys/chem	15	17	21	11	16	21	24	19	15	18	20
Environmental sciences(6)	54	53	50	45	42	35	29	58	68	50	35
Geochemistry	48	51	48	43	48	37	31	46	39	56	63
Geology(7)	-	-	105	124	111	118	114	144	165	166	191
Structural geology(7)	27	25	-	-	-	-	-	-	-	-	-
Geomorph/glacial geology	13	21	10	9	13	11	18	9	10	14	18
Geophysics/seismology(8)	72	81	75	68	92	89	75	83	87	91	113
Hydrology/water res	21	24	20	18	17	16	18	24	24	13	16
Marine sciences(9)	-	-	22	21	24	22	38	28	26	39	27
Marine sciences, other(9)	30	41	-	-	-	-	-	-	-	-	-
Meteorology(10)	-	-	17	28	23	27	17	35	27	20	31
Minerology, petrology	30	41	24	28	28	17	24	19	36	26	36
Oceanography	70	92	87	78	68	78	73	81	87	89	85
Paleontology	19	24	17	35	23	16	21	24	17	21	24
Stratigraphy, sediment	42	47	25	16	23	14	22	30	24	25	29
Geological sciences, gen(11)	-	-	15	10	11	12	18	8	19	31	34
Geological sciences, other(11)	-	-	21	25	11	12	29	31	28	28	36
Earth sciences, general(11)	45	38	-	-	-	-	-	-	-	-	-
Earth sciences, other(11)	16	29	-	-	-	-	-	-	-	-	-
Physical sciences, other(3)	-	-	13	6	18	30	26	33	17	31	21
MATHEMATICS	728	720	701	698	688	729	740	749	859	892	1,040
Algebra	56	60	55	65	55	46	57	54	50	39	72
Analysis/funct analysis	105	98	76	71	83	81	86	76	103	90	132
Applied mathematics	118	108	125	108	116	135	131	142	158	185	192
Computing theory	16	11	12	13	15	10	14	12	12	12	19
Geometry	29	32	44	27	35	38	30	44	47	42	66
Logic	18	17	21	25	30	23	18	20	12	19	23
Number theory	163	165	151	181	150	141	143	152	167	157	206
Operations research	24	28	19	27	18	20	15	26	23	26	30
Math probability/stat	36	36	20	27	22	29	22	29	22	29	16
Topology	55	45	44	42	35	34	41	27	37	50	57
Mathematics, general	77	84	86	78	85	125	137	134	177	191	182
Mathematics, other	31	36	48	34	44	47	46	33	51	52	45
COMPUTER/INFORMATION SCI	232	220	286	295	310	399	450	515	612	705	797
Computer sciences	232	220	264	256	249	355	384	442	519	612	719
Information sci/systems(3)	-	-	22	39	61	44	66	73	93	93	78

See footnotes at end of table.

Table 1. Science and engineering (S&E) doctorates awarded, by subfield: 1981-91--continued

Subfield	Year of doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
AGRICULTURAL & BIOLOGICAL SCI	4,786	4,844	4,756	4,877	4,904	4,805	4,815	5,127	5,203	5,507	5,714
Agricultural sciences	982	951	1,015	997	1,111	998	976	1,015	1,088	1,176	1,072
Agric business & mgmt (12)	-	-	-	-	-	-	-	-	2	2	1
Agronomy	177	159	149	137	158	159	143	141	140	143	117
Animal breeding/genetics(13)	19	22	25	28	28	25	23	27	23	22	18
Animal nutrition(14)	-	-	56	71	78	65	82	54	67	54	57
Animal sci/nutrition(14)	149	133	-	-	-	-	-	-	-	-	-
Dairy science(14)	-	-	-	-	-	-	-	12	16	20	19
Poultry science(14)	-	-	-	-	-	-	-	10	11	17	13
Animal sciences, other(14)	-	-	92	90	95	91	76	86	95	90	91
Fish/wildlife(15)	66	65	-	-	-	-	-	-	-	-	-
Fisheries science(15)	-	-	36	45	36	32	32	42	34	42	39
Wildlife management(15)	-	-	31	31	38	20	23	3	-	-	-
Wildlife/range mgmt(15)	-	-	-	-	-	-	-	36	52	58	59
Food sciences(16)	104	110	141	113	136	121	131	16	1	-	-
Food engineering(16)	-	-	-	-	-	-	-	6	11	10	12
Food sciences, other(16)	-	-	-	-	-	-	-	119	147	141	137
Forestry science(17)	95	78	90	94	105	88	100	15	-	-	-
Forest biology(17)	-	-	-	-	-	-	-	21	22	27	17
Forest engineering(17)	-	-	-	-	-	-	-	3	1	2	2
Forest management(17)	-	-	-	-	-	-	-	18	21	14	22
Wood science(17)	-	-	-	-	-	-	-	7	16	16	16
Renewable natural resources(17)	-	-	-	-	-	-	-	7	12	16	19
Forestry & related sci, other(17)	-	-	-	-	-	-	-	35	57	62	45
Horticulture science	85	88	72	66	76	60	71	61	75	101	78
Plant breeding/genetics(18)	-	-	71	78	88	78	70	83	64	87	69
Plant pathology(18)	-	-	92	57	89	85	76	46	63	64	90
Phytopathology(18)	99	114	-	-	-	-	-	-	-	-	-
Plant protection-pest mgmt(19)	-	-	-	-	-	-	-	1	6	4	2
Plant sciences, other(18)	-	-	16	20	21	22	20	23	15	23	17
Soil sciences(20)	90	83	85	99	97	103	74	18	-	-	-
Soil chem/microbio(20)	-	-	-	-	-	-	-	33	28	27	24
Soil sciences, other(20)	-	-	-	-	-	-	-	62	75	91	78
Agriculture, general	5	5	7	1	5	4	5	9	7	5	3
Agriculture, other	93	94	52	67	61	45	50	21	27	38	27

See footnotes at end of table.

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Table 1. Science and engineering (S&E) doctorates awarded, by subfield: 1981-91--continued

Subfield	Year of doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
AGRICULTURAL & BIOLOGICAL SCI (con't.)											
Biological sciences	3,804	3,893	3,741	3,880	3,793	3,807	3,839	4,112	4,115	4,331	4,642
Anatomy	156	163	107	103	135	86	92	88	80	70	77
Biochemistry	645	649	647	606	581	576	573	613	669	678	762
Biometrics/biostatistics	48	59	45	49	40	30	37	47	46	47	59
Biophysics	99	91	88	90	69	72	86	97	87	103	99
Botany, other(21)	-	-	116	126	120	121	106	112	117	104	105
Botany(21)	147	146	-	-	-	-	-	-	-	-	-
Cell biology(22)	-	-	110	123	100	130	127	118	133	145	150
Cytology(22)	47	41	-	-	-	-	-	-	-	-	-
Ecology	20	10	13	15	15	9	6	7	10	22	37
Develop bio/embryology(23)	198	173	183	202	200	183	158	155	161	166	190
Endocrinology(3)	-	-	28	30	17	17	19	21	21	24	33
Entomology	143	170	141	156	173	170	123	133	139	147	138
Human/animal genetics(24)	-	-	95	82	105	91	113	118	112	153	160
Plant genetics(24)	-	-	19	20	31	20	26	26	18	31	23
Genetics(24)	157	176	-	-	-	-	-	-	-	-	-
Human/animal pathology(25)	-	-	97	88	110	91	127	112	105	101	120
Plant pathology(25)	-	-	29	30	38	28	33	30	22	37	50
Pathology(25)	106	97	-	-	-	-	-	-	-	-	-
Human/animal pharmacology	280	280	218	237	235	245	234	252	241	243	262
Human/animal physiology(26)	-	-	246	237	245	240	248	225	272	278	272
Animal physiology(26)	327	309	-	-	-	-	-	-	-	-	-
Plant physiology	68	56	67	70	58	52	62	74	47	51	65
Immunology	148	151	154	133	124	146	136	179	152	153	177
Microbiology(27)	-	-	309	346	289	326	301	333	340	335	373
Bacteriology(27)	-	-	10	12	17	12	13	7	11	15	11
Microbiology/bacteriology(27)	355	324	-	-	-	-	-	-	-	-	-
Molecular biology	187	223	225	275	277	298	303	364	413	413	481
Neurosciences	-	117	134	145	156	120	153	163	181	192	239
Nutritional sciences(28)	99	120	111	109	113	122	141	127	128	118	106
Parasitology	18	14	9	30	21	25	16	20	20	13	20
Toxicology(3)	-	-	60	97	99	104	115	108	111	91	86
Zoology, other(29)	-	-	192	158	147	155	139	167	132	122	126
Zoology(29)	198	199	-	-	-	-	-	-	-	-	-
Biological sci, general	204	196	174	190	190	213	229	256	231	337	278
Biological sci, other	154	129	106	121	88	125	123	160	116	142	143

See footnotes at end of table.

Table 1. Science and engineering (S&E) doctorates awarded, by subfield: 1981-91--continued

Subfield	Year of doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
SOCIAL SCIENCES	3,154	3,077	3,083	3,015	2,994	3,139	2,980	3,051	3,125	3,150	3,306
Agricultural economics	168	179	157	158	147	158	136	155	164	144	165
Anthropology	369	333	373	335	353	381	352	325	325	324	340
Area studies	20	19	20	23	19	28	17	16	17	22	23
Criminology(30)	35	36	49	41	38	24	29	43	32	42	35
Demography(3)	-	-	26	19	25	15	26	19	22	20	27
Econometrics	17	24	21	27	27	25	25	27	26	26	24
Economics	808	737	792	767	785	835	798	826	872	837	853
Geography	109	106	121	114	120	120	111	129	105	131	108
History of science(31)	26	29	13	24	23	24	25	22	20	26	27
International relations	87	77	76	95	78	76	82	77	94	97	88
Linguistics	176	191	164	160	176	189	199	166	188	167	227
Political science/government(32)	-	-	397	419	406	414	404	392	430	462	434
Political science(32)	445	459	-	-	-	-	-	-	-	-	-
Public policy studies(3)	-	-	69	54	70	81	83	73	79	87	111
Sociology	605	568	525	515	461	491	423	449	436	428	466
Statistics	40	43	47	39	60	65	49	47	69	69	31
Urban studies(33)	94	93	74	81	75	50	72	86	62	67	89
Social sciences, general	22	34	17	17	17	36	30	28	26	23	36
Social sciences, other	133	149	142	127	114	127	119	171	158	178	222
PSYCHOLOGY	3,358	3,159	3,347	3,257	3,117	3,124	3,169	3,064	3,203	3,269	3,240
Clinical	1,259	1,168	1,241	1,195	1,181	1,172	1,214	1,094	1,260	1,330	1,302
Cognitive(3)	-	-	65	77	76	70	80	83	79	76	94
Comparative	11	12	11	13	11	14	9	7	8	8	7
Counseling(34)	351	348	432	464	431	449	486	482	501	466	495
Developmental(35)	201	192	219	207	175	184	200	176	148	159	156
Educational	180	140	154	210	127	106	89	103	105	98	110
Experimental	283	240	209	169	165	147	146	135	146	143	142
Industrial/organizational(36)	87	83	90	106	102	110	107	118	104	125	142
Physiological	102	90	94	73	79	73	69	85	62	46	45
Quantitative(3)	-	-	14	17	16	23	13	12	11	15	7
Personality	49	36	32	25	21	16	25	18	28	20	13
Psychometrics	27	8	10	6	10	11	9	11	6	8	9
School	133	166	121	89	92	116	93	115	107	82	82
Social	180	179	191	157	167	141	133	140	128	145	147
Psychology, general	279	242	292	267	265	308	339	359	358	368	321
Psychology, other	216	255	172	182	199	184	157	126	152	180	168

See footnotes at end of table.

Table 1. Science and engineering (S&E) doctorates awarded, by subfield: 1981-91--continued

Subfield	Year of doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TOTAL, ENGINEERING	2,528	2,646	2,781	2,913	3,166	3,376	3,712	4,188	4,544	4,893	5,212
Aeronautical/astronautical(37)	97	86	106	119	124	118	142	150	178	192	207
Agricultural	64	48	58	74	60	52	74	70	102	101	84
Bioengineering/biomedical(38)	64	59	74	70	69	67	75	114	115	129	149
Ceramic	24	20	24	25	19	25	42	30	35	43	58
Chemical	296	306	349	361	440	476	527	624	625	561	620
Civil	287	308	354	351	358	387	441	489	498	505	509
Communications(3)	-	-	25	11	30	23	26	24	25	35	21
Computer	71	72	83	56	55	77	62	100	117	131	178
Electrical/electronics(39)	-	-	436	587	629	706	691	886	995	1,110	1,206
Electrical(39)	410	470	66	6	2	-	-	-	-	-	-
Electronics(39)	68	74	15	-	-	-	-	-	-	-	-
Engineering mechanics	78	103	68	91	89	94	113	105	110	111	113
Engineering physics	22	12	10	8	12	13	13	9	16	16	23
Engineering science(3)	-	-	30	28	31	30	26	32	27	37	42
Environmental health engin(40)	71	60	43	57	33	42	36	43	41	48	64
Industrial	66	79	86	84	92	101	120	127	162	151	163
Materials science	113	147	157	168	188	187	238	252	257	307	362
Mechanical	282	334	311	336	424	442	544	610	650	772	761
Metallurgical(41)	97	88	87	78	96	93	112	92	88	90	70
Mining/mineral(42)	8	7	22	16	16	22	27	17	33	39	38
Naval arch/marine engin(1)	-	-	4	5	8	9	7	9	9	8	5
Nuclear	130	121	103	120	96	98	84	104	86	114	107
Ocean(3)	-	-	12	11	25	14	24	21	20	17	21
Operations research	80	58	44	50	54	54	51	44	68	46	76
Petroleum(43)	21	27	22	17	24	18	23	33	29	49	28
Polymer(3)	-	-	21	31	40	37	34	28	58	48	42
Systems(44)	68	49	57	52	57	33	47	44	30	51	48
Engineering, general	36	29	30	29	26	55	54	49	61	75	78
Engineering, other	75	89	84	72	69	103	79	82	109	107	139
TOTAL, NON-S&E(45)	13,361	13,094	12,889	12,823	12,585	12,644	12,657	12,750	12,788	13,380	13,703
TOTAL, ALL FIELDS	31,357	31,111	31,282	31,337	31,297	31,895	32,363	33,489	34,318	36,057	37,451

See footnotes at end of table.

FOOTNOTES

[A hyphen (-) in a data column signifies that the subfield was not identified separately in the questionnaire for that year (e.g., the subfield "polymer physics" was introduced in 1983), or that this subfield was included in the questionnaire for that year but no doctorates were reported.]

(1) This subfield was introduced in 1983 and deleted in 1991.

(2) This subfield was changed from "nuclear structure" to "nuclear" in 1983.

(3) This subfield was introduced in 1983.

(4) This subfield was deleted in 1982.

(5) This subfield was changed from "applied geology, geological engineering, and economic geology" to "applied geology" in 1983. "Applied geology" was deleted in 1991.

(6) "Environmental sciences, general" and "environmental sciences, other" were replaced by "environmental sciences" in 1983.

(7) "Structural geology" was discontinued in 1983, and "geology" was introduced.

(8) This subfield was changed from "geophysics, solid earth" to "geophysics and seismology" in 1983.

(9) "Marine sciences, other" was discontinued in 1983, and "marine sciences" was introduced.

(10) This subfield had been deleted in 1976, but was restored in 1983.

(11) "Earth science, general" and "earth science, other" were discontinued in 1983, and "geological sciences, general" and "geological sciences, other" were introduced.

(12) This subfield was introduced in 1988.

(13) This subfield was changed from "animal husbandry" to "animal breeding/genetics" in 1983.

(14) "Animal science and animal nutrition" was separated into "animal nutrition" and "animal sciences, other" in 1983. In 1988 "dairy science" and "poultry science" were introduced.

(15) "Fish and wildlife" was separated into two subfields in 1983. In 1988 "wildlife management" was discontinued, and "wildlife/range management" was introduced.

(16) This subfield was changed from "food science and technology" to "food sciences" in 1983. In 1988 "food sciences" was separated into "food distribution," "food engineering," and "food sciences, other."

(17) In 1988 "forestry science" was separated into "forestry biology," "forest engineering," "forest management," "wood science," "renewable natural resources," and "forestry and related sciences, other."

(18) "Phytopathology" was discontinued in 1983, and subfields "plant breeding and genetics," "plant pathology," and "plant sciences, other" were introduced.

(19) This subfield was introduced in 1988 and deleted in 1991.

(20) This subfield was changed from "soils and soil science" to "soil sciences" in 1983. In 1988 "soil sciences" was separated into "soil chemistry/microbiology" and "soil sciences, other."

(21) "Botany" was discontinued in 1983, and "botany, other" was introduced.

FOOTNOTES (continued)

(22) "Cytology" was discontinued in 1983, and "cell biology" was introduced.

(23) This subfield was changed from "embryology" to "developmental biology/embryology" in 1990.

(24) "Genetics" was separated into "plant genetics" and "human and animal genetics" in 1983.

(25) "Pathology" was separated into "plant pathology" and "human and animal pathology" in 1983.

(26) "Animal physiology" was discontinued in 1983, and "human and animal physiology" was introduced.

(27) "Microbiology/bacteriology" was separated into two subfields in 1983.

(28) This subfield was changed from "nutrition and dietetics" to "nutritional sciences" in 1983.

(29) "Zoology" was discontinued in 1983, and "zoology, other" was introduced.

(30) This subfield was introduced in 1980 as "criminology and criminal justice." In 1983 it was changed to "criminology."

(31) The subfield "history and philosophy of science" was introduced in 1971. The name was changed to "history of science" in 1983.

(32) "Political science" was discontinued in 1983, and "political science and government" was introduced.

(33) This subfield was changed from "urban and regional planning" to "urban studies" in 1983.

(34) This subfield was changed from "counseling and guidance" to "counseling" in 1983.

(35) This subfield was changed from "developmental and gerontological" to "developmental" in 1983.

(36) This subfield was changed from "industrial and personnel" to "industrial and organizational" in 1983.

(37) "Aerospace" was added to "aeronautical/astronautical engineering" in 1983.

(38) "Bioengineering" was added to "biomedical engineering" in 1983.

(39) "Electrical" and "electronics" were merged in 1983.

(40) This subfield was changed from "sanitary and environmental" to "environmental health" in 1983.

(41) This subfield was changed from "metallurgy and physical metallurgical" to "metallurgical" in 1983.

(42) This subfield was changed from "mining" to "mining and mineral" in 1983.

(43) This subfield was changed from "fuel technology and petroleum engineering" to "petroleum" in 1983.

(44) This subfield was changed from "systems design and systems science" to "systems" in 1983.

(45) Non-S&E doctorates awarded include those whose field of specialization is unknown.

SOURCE: National Science Foundation/SRS, Survey of Earned Doctorates

Table 2. Science and engineering (S&E) doctorates awarded to females, by subfield: 1981-91

Subfield	Year of doctorate											Percent female	
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1981	1991
TOTAL, S&E	4,116	4,270	4,624	4,704	4,812	5,084	5,234	5,577	6,008	6,295	6,757	22.9	28.5
TOTAL, SCIENCES	4,017	4,146	4,500	4,553	4,614	4,859	4,992	5,291	5,633	5,880	6,305	26.0	34.0
PHYSICAL SCIENCES	309	357	371	399	464	505	526	557	617	653	659	11.8	18.3
Physics/astronomy	73	84	74	79	102	109	120	130	118	150	152	7.2	10.8
Acoustics	2	-	1	-	3	2	-	2	-	2	2	15.4	16.7
Astronomy	7	11	8	4	5	4	7	13	8	13	7	14.0	14.0
Astrophysics	4	5	7	8	6	5	6	3	9	7	6	6.8	8.0
Atomic/molecular	8	7	6	3	6	6	4	8	8	7	4	12.1	5.3
Electron(1)	-	-	-	-	1	-	-	-	-	-	-	-	-
Elementary particle	8	4	3	8	8	11	15	16	10	14	20	6.7	11.0
Fluids	3	2	2	1	1	2	-	-	1	1	-	21.4	-
Nuclear(2)	3	6	6	8	7	8	4	6	8	5	7	4.8	10.6
Optics	1	2	2	3	9	9	5	6	7	5	13	1.9	15.5
Plasma	2	3	2	3	3	3	5	4	4	2	2	3.1	3.4
Polymer(3)	-	-	-	-	3	3	3	-	1	3	3	-	17.6
Solid state	20	19	21	18	19	29	24	35	23	35	41	7.9	11.1
Physics, general	10	13	9	12	10	18	31	25	19	33	29	6.1	11.7
Physics, other	5	12	7	11	21	9	16	12	20	23	18	5.7	11.6
Chemistry	236	273	297	320	362	396	406	427	499	503	507	14.6	23.1
Analytical	30	27	46	32	62	46	72	60	63	68	82	13.1	27.1
Inorganic	35	42	38	50	47	62	59	66	74	60	73	18.6	28.2
Nuclear	-	3	3	3	1	2	-	-	-	2	4	-	28.6
Organic	61	78	70	73	79	96	88	89	105	104	108	12.3	20.1
Pharmaceutical	5	11	16	15	15	17	16	19	21	20	26	9.6	31.7
Physical	51	49	61	63	70	71	59	71	87	76	86	18.5	23.7
Polymer	5	5	12	12	14	12	13	12	15	13	24	8.1	21.6
Theoretical	6	6	7	5	7	6	17	9	9	14	7	18.2	15.6
Chemistry, general	25	29	23	40	45	52	53	73	91	128	70	13.0	17.2
Chemistry, other	18	23	21	27	22	32	29	28	34	18	27	24.3	37.0

See footnotes at end of table.

Table 2. Science and engineering (S&E) doctorates awarded to females, by subfield: 1981-91--continued

Subfield	Year of doctorate											Percent female	
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1981	1991
EARTH, ATMOS, & OCEAN SCI	56	103	97	106	111	100	114	145	150	149	185	9.6	22.1
Applied geology(5)	-	2	-	2	-	1	1	1	-	3	-	-	-
Atmos/meteorol sci, gen(3)	-	-	1	1	-	-	4	1	3	5	2	-	7.7
Atmos/meteorol sci, other	1	1	3	3	-	1	3	1	3	1	1	3.0	10.0
Atmospheric dynamics	1	3	1	2	1	2	3	2	2	4	3	3.7	14.3
Atmospheric phys/chem	1	-	1	-	1	3	4	-	2	1	2	6.7	10.0
Environmental sciences(6)	11	11	11	9	6	8	6	16	20	11	13	20.4	37.1
Geochemistry	5	8	9	7	11	7	9	7	13	9	19	10.4	30.2
Geology(7)	-	-	17	22	21	23	25	36	35	32	34	-	17.8
Structural geology(7)	1	6	-	-	-	-	-	-	-	-	-	3.7	-
Geomorph/glacial geology	2	6	2	1	1	2	2	3	3	1	2	15.4	11.1
Geophysics/seismology(8)	6	6	8	7	13	18	11	8	11	15	17	8.3	15.0
Hydrology/water res	1	3	1	2	1	1	5	5	2	1	2	4.8	12.5
Marine sciences(9)	-	-	7	6	2	3	3	9	6	7	2	-	7.4
Marine sciences, other(9)	2	9	-	-	-	-	-	-	-	-	-	6.7	-
Meteorology(10)	-	-	-	2	2	2	-	7	-	3	7	-	22.6
Minerology, petrology	5	8	6	6	10	4	8	3	5	4	15	16.7	41.7
Oceanography	7	14	18	21	21	8	13	17	20	24	23	10.0	27.1
Paleontology	1	7	2	6	5	7	5	3	4	2	7	5.3	29.2
Stratigraphy, sediment	7	8	4	2	5	-	2	8	6	5	8	16.7	27.6
Geological sciences, gen(11)	-	-	2	3	5	1	3	2	2	5	11	-	32.4
Geological sciences, other(11)	-	-	2	4	3	4	5	6	11	8	10	-	27.8
Earth sciences, general(11)	3	5	-	-	-	-	-	-	-	-	-	6.7	-
Earth sciences, other(11)	2	6	-	-	-	-	-	-	-	-	-	12.5	-
Physical sciences, other(3)	-	-	2	-	3	5	2	10	2	8	7	-	33.3
MATHEMATICS	112	96	113	115	106	121	125	121	155	158	194	15.4	18.7
Algebra	14	12	8	13	6	18	10	10	10	6	16	25.0	22.2
Analysis/funct analysis	8	15	8	13	10	11	6	15	20	15	21	7.6	15.9
Applied mathematics	24	10	21	16	19	20	29	17	28	34	27	20.3	14.1
Computing theory	2	-	2	1	1	-	4	3	1	1	3	12.5	15.8
Geometry	1	2	6	6	2	1	3	4	7	8	5	3.4	7.6
Logic	1	-	2	1	4	3	2	2	5	3	1	5.6	4.3
Number theory	32	29	27	31	32	27	36	31	38	31	56	19.6	27.2
Operations research	1	4	4	4	2	1	2	5	5	1	8	4.2	26.7
Math probability/stat	4	5	5	1	6	4	1	3	4	2	4	11.1	25.0
Topology	11	5	9	10	4	6	3	3	8	11	18	20.0	31.6
Mathematics, general	8	7	8	11	12	20	22	20	17	32	26	10.4	14.3
Mathematics, other	6	7	13	8	8	10	7	8	12	14	9	19.4	20.0
COMPUTER/INFORMATION SCI	26	20	36	37	33	48	65	56	108	110	116	11.2	14.6
Computer sciences	26	20	33	24	20	39	51	39	69	85	96	11.2	13.4
Information sci/systems(3)	-	-	3	13	13	9	14	17	39	25	20	-	25.6

See footnotes at end of table.

Table 2. Science and engineering (S&E) doctorates awarded to females, by subfield: 1981-91--continued

Subfield	Year of doctorate											Percent female	
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1981	1991
AGRICULTURAL & BIOLOGICAL SCI	1,221	1,292	1,366	1,348	1,409	1,452	1,531	1,691	1,770	1,863	1,968	25.5	34.4
Agricultural sciences	134	151	133	133	171	172	171	186	228	247	209	13.6	19.5
Agric business & mgmt (12)	-	-	-	-	-	-	-	-	1	1	-	-	-
Agronomy	15	16	11	12	19	15	17	19	20	21	11	8.5	9.4
Animal breeding/genetics(13)	-	3	4	5	8	4	3	2	3	3	2	-	11.1
Animal nutrition(14)	-	-	6	7	13	13	13	12	15	13	10	-	17.5
Animal sci/nutrition(14)	17	17	-	-	-	-	-	-	-	-	-	11.4	-
Dairy science(14)	-	-	-	-	-	-	-	1	1	2	4	-	21.1
Poultry science(14)	-	-	-	-	-	-	-	2	2	3	1	-	7.7
Animal sciences, other(14)	-	-	9	15	13	16	16	13	25	11	19	-	20.9
Fish/wildlife(15)	9	7	-	-	-	-	-	-	-	-	-	13.6	-
Fisheries science(15)	-	-	6	5	5	9	-	8	5	6	4	-	10.3
Wildlife management(15)	-	-	1	3	1	2	1	-	-	-	-	-	-
Wildlife/range mgmt(15)	-	-	-	-	-	-	-	8	10	6	8	-	13.6
Food sciences(16)	28	30	38	32	33	40	48	3	-	-	-	26.9	-
Food engineering(16)	-	-	-	-	-	-	-	1	1	2	2	-	16.7
Food sciences, other(16)	-	-	-	-	-	-	-	36	53	54	46	-	33.6
Forestry science(17)	6	4	4	5	15	17	5	2	-	-	-	6.3	-
Forest biology(17)	-	--	-	-	-	-	3	3	8	3	-	17.6	
Forest engineering(17)	-	-	-	-	-	-	-	-	-	-	1	-	50.0
Forest management(17)	-	-	-	-	-	-	-	2	2	1	4	-	18.2
Wood science(17)	-	-	-	-	-	-	-	-	-	-	2	-	12.5
Renewable natural resources(17)	-	-	-	-	-	-	-	-	1	3	3	-	15.8
Forestry & related sci, other(17)	-	-	-	-	-	-	-	6	8	10	5	-	11.1
Horticulture science	17	19	9	21	11	12	16	16	19	27	19	20.0	24.4
Plant breeding/genetics(18)	-	-	13	8	14	13	11	12	13	20	10	-	14.5
Plant pathology(18)	-	-	19	8	24	14	22	12	24	25	26	-	28.9
Phytopathology(18)	21	27	-	-	-	-	-	-	-	-	-	21.2	-
Plant protection-pest mgmt(19)	-	-	-	-	-	-	-	-	-	1	-	-	-
Plant sciences, other(18)	-	-	1	2	3	5	3	3	4	4	4	-	23.5
Soil sciences(20)	7	15	7	4	7	10	7	1	-	-	-	7.8	-
Soil chem/microbio(20)	-	-	-	-	-	-	-	7	7	6	6	-	25.0
Soil sciences, other(20)	-	-	-	-	-	-	-	11	7	8	11	-	14.1
Agriculture, general	1	1	-	-	-	-	-	3	2	-	1	20.0	33.3
Agriculture, other	13	12	5	6	5	2	9	3	2	12	7	14.0	25.9

See footnotes at end of table.

Table 2. Science and engineering (S&E) doctorates awarded to females, by subfield: 1981-91--continued

Subfield	Year of doctorate											Percent female	
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1981	1991
AGRICULTURAL & BIOLOGICAL SCI (con't.)													
Biological sciences	1,087	1,141	1,233	1,215	1,238	1,280	1,360	1,505	1,542	1,616	1,759	28.6	37.9
Anatomy	48	62	37	37	45	27	42	32	27	29	31	30.8	40.3
Biochemistry	189	166	195	191	184	194	199	203	268	237	285	29.3	37.4
Biometrics/biostatistics	12	18	22	18	12	10	14	15	20	18	29	25.0	49.2
Biophysics	10	13	16	21	7	13	22	21	21	23	26	10.1	26.3
Botany, other(21)	-	-	39	38	34	42	36	41	52	33	38	-	36.2
Botany(21)	42	42	-	-	-	-	-	-	-	-	-	28.6	-
Cell biology(22)	-	-	41	48	39	44	55	55	57	69	63	-	42.0
Cytology(22)	14	18	-	-	-	-	-	-	-	-	-	29.8	-
Ecology	10	3	7	8	5	7	-	3	4	12	20	50.0	54.1
Develop bio/embryology(23)	52	42	37	45	52	40	38	47	36	52	60	26.3	31.6
Endocrinology(3)	-	-	14	11	4	6	11	10	10	11	16	-	48.5
Entomology	13	23	20	29	34	22	25	26	23	26	35	9.1	25.4
Human/animal genetics(24)	-	-	43	39	49	41	54	57	57	73	71	-	44.4
Plant genetics(24)	-	-	5	4	8	10	7	6	3	7	5	-	21.7
Genetics(24)	62	65	-	-	-	-	-	-	-	-	-	39.5	-
Human/animal pathology(25)	-	-	24	23	35	33	48	43	41	32	45	-	37.5
Plant pathology(25)	-	-	8	5	8	5	10	9	8	12	12	-	24.0
Pathology(25)	27	26	-	-	-	-	-	-	-	-	-	25.5	-
Human/animal pharmacology	69	77	71	60	76	81	86	92	99	91	90	24.6	34.4
Human/animal physiology(26)	-	-	68	59	70	77	76	89	105	98	102	-	37.5
Animal physiology(26)	80	76	-	-	-	-	-	-	-	-	-	24.5	-
Plant physiology	11	13	24	23	12	18	15	23	15	19	19	16.2	29.2
Immunology	60	58	66	52	54	51	53	91	61	72	76	40.5	42.9
Microbiology(27)	-	-	117	121	113	118	103	120	124	116	150	-	40.2
Bacteriology(27)	-	-	4	4	4	2	6	2	2	4	5	-	45.5
Microbiology/bacteriology(27)	103	91	-	-	-	-	-	-	-	-	-	29.0	-
Molecular biology	69	81	76	103	95	115	116	130	153	152	182	36.9	37.8
Neurosciences	-	38	49	43	58	39	48	60	63	76	88	-	36.8
Nutritional sciences(28)	59	71	72	68	72	86	97	89	91	88	71	59.6	67.0
Parasitology	5	2	-	4	2	3	5	8	5	4	7	27.8	35.0
Toxicology(3)	-	-	16	25	24	33	34	30	39	36	30	-	34.9
Zoology, other(29)	-	-	63	42	46	44	44	43	35	37	39	-	31.0
Zoology(29)	47	45	-	-	-	-	-	-	-	-	-	23.7	-
Biological sci, general	59	62	60	56	62	73	81	97	77	142	112	28.9	40.3
Biological sci, other	46	49	39	38	34	46	35	63	46	47	52	29.9	36.4

See footnotes at end of table.

Table 2. Science and engineering (S&E) doctorates awarded to females, by subfield: 1981-91--continued

Subfield	Year of doctorate											Percent female	
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1981	1991
SOCIAL SCIENCES	820	840	920	917	950	1,035	936	1,045	1,036	1,040	1,199	26.0	36.3
Agricultural economics	13	20	18	29	21	16	23	31	25	27	36	7.7	21.8
Anthropology	152	138	175	171	181	197	181	170	148	173	209	41.2	61.5
Area studies	5	7	11	2	5	6	5	5	5	9	4	25.0	17.4
Criminology(30)	9	17	7	10	10	7	7	15	10	16	18	25.7	51.4
Demography(3)	-	-	12	8	9	6	7	11	10	11	16	-	59.3
Econometrics	1	2	4	4	2	2	4	4	2	3	5	5.9	20.8
Economics	100	98	129	120	122	163	136	163	171	170	173	12.4	20.3
Geography	20	19	37	21	29	39	26	33	25	35	33	18.3	30.6
History of science(31)	5	10	7	11	2	10	10	10	9	9	11	19.2	40.7
International relations	12	11	15	13	16	15	15	14	29	15	24	13.8	27.3
Linguistics	78	90	86	82	91	96	106	83	106	90	110	44.3	48.5
Political science/government(32)	-	-	83	97	107	117	111	96	107	108	118	-	27.2
Political science(32)	96	106	-	-	-	-	-	-	-	-	-	21.6	-
Public policy studies(3)	-	-	26	20	24	34	30	25	28	25	38	-	34.2
Sociology	242	214	216	226	234	215	168	238	222	207	231	40.0	49.6
Statistics	7	5	5	11	14	17	13	9	20	12	10	17.5	32.3
Urban studies(33)	17	25	22	21	21	16	22	31	23	21	21	18.1	23.6
Social sciences, general	5	14	3	6	8	13	6	13	9	9	17	22.7	47.2
Social sciences, other	58	64	64	65	54	66	66	94	87	100	125	43.6	56.3
PSYCHOLOGY	1,473	1,438	1,597	1,631	1,541	1,598	1,695	1,676	1,797	1,907	1,984	43.9	61.2
Clinical	557	517	594	598	591	602	667	611	711	782	840	44.2	64.5
Cognitive(3)	-	-	31	37	23	33	41	34	33	35	46	-	48.9
Comparative	3	6	4	9	2	6	6	4	1	3	5	27.3	71.4
Counseling(34)	160	156	199	230	215	237	254	261	284	281	306	45.6	61.8
Developmental(35)	121	125	148	156	112	117	139	131	116	112	120	60.2	76.9
Educational	77	75	75	110	78	58	50	65	60	69	64	42.8	58.2
Experimental	93	97	81	70	65	64	54	61	70	49	64	32.9	45.1
Industrial/organizational(36)	22	23	30	40	29	52	49	54	49	53	76	25.3	53.5
Physiological	34	23	27	20	35	30	32	45	33	28	21	33.3	46.7
Quantitative(3)	-	-	4	5	4	8	7	5	6	3	2	-	28.6
Personality	26	17	9	12	9	9	11	8	17	10	4	53.1	30.8
Psychometrics	10	1	8	3	3	7	3	6	3	4	3	37.0	33.3
School	73	86	72	50	54	59	53	66	69	53	57	54.9	69.5
Social	76	85	103	82	94	79	72	75	68	92	86	42.2	58.5
Psychology, general	133	105	133	134	125	149	170	192	200	231	182	47.7	56.7
Psychology, other	88	122	79	75	102	88	87	58	77	102	108	40.7	64.3

See footnotes at end of table.

Table 2. Science and engineering (S&E) doctorates awarded to females, by subfield: 1981-91--continued

Subfield	Year of doctorate											Percent female	
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1981	1991
TOTAL, ENGINEERING	99	124	124	151	198	225	242	286	375	415	452	3.9	8.7
Aeronautical/astronautical(37)	-	1	2	2	5	1	10	9	8	4	7	-	3.4
Agricultural	2	2	1	1	3	1	3	3	6	7	8	3.1	9.5
Bioengineering/biomedical(38)	3	6	8	9	11	9	15	18	26	23	27	4.7	18.1
Ceramic	1	1	3	2	-	3	4	3	4	11	10	4.2	17.2
Chemical	11	17	22	25	35	53	56	60	74	71	72	3.7	11.6
Civil	6	12	12	19	18	19	17	25	45	39	30	2.1	5.9
Communications(3)	-	-	-	-	2	-	-	3	1	2	2	-	9.5
Computer	8	3	6	1	5	5	2	7	12	11	9	11.3	5.1
Electrical/electronics(39)	-	-	6	14	27	33	30	38	54	71	66	-	5.5
Electrical(39)	14	17	1	-	1	-	-	-	-	-	-	3.4	-
Electronics(39)	-	2	-	-	-	-	-	-	-	-	-	-	-
Engineering mechanics	1	5	2	9	4	4	3	3	7	9	7	1.3	6.2
Engineering physics	2	-	-	-	1	-	1	-	-	1	2	9.1	8.7
Engineering science(3)	-	-	1	-	-	3	-	3	3	6	2	-	4.8
Environmental health engin(40)	4	5	1	6	2	2	1	5	9	10	9	5.6	14.1
Industrial	6	6	6	16	6	14	13	19	18	25	17	9.1	10.4
Materials science	11	13	22	17	23	18	36	25	35	31	56	9.7	15.5
Mechanical	5	12	6	6	22	14	14	26	22	29	50	1.8	6.6
Metallurgical(41)	5	3	5	7	9	3	5	5	6	7	8	5.2	11.4
Mining/mineral(42)	-	1	1	-	-	2	1	1	4	2	6	-	15.8
Naval arch/marine engin(1)	-	-	-	-	-	-	-	-	1	1	-	-	-
Nuclear	6	7	5	6	3	6	2	4	7	9	4	4.6	3.7
Ocean(3)	-	-	-	-	-	-	1	-	2	2	1	-	4.8
Operations research	7	5	5	-	8	11	7	4	14	6	22	8.8	28.9
Petroleum(43)	-	2	-	-	-	1	-	2	1	-	1	-	3.6
Polymer(3)	-	-	1	2	6	7	4	3	5	7	7	-	16.7
Systems(44)	4	2	3	1	4	2	3	7	3	3	4	5.9	8.3
Engineering, general	1	1	1	-	-	5	8	2	2	10	6	2.8	7.7
Engineering, other	2	1	4	8	3	9	6	11	6	18	19	2.7	13.7
TOTAL, NON-S&E(45)	5,776	5,823	5,909	5,995	5,932	6,220	6,191	6,235	6,499	6,807	7,008	43.2	51.1
TOTAL, ALL FIELDS	9,892	10,093	10,533	10,699	10,744	11,304	11,425	11,812	12,507	13,102	13,765	31.5	36.8

See footnotes at end of table.

FOOTNOTES

[A hyphen (-) in a data column signifies that the subfield was not identified separately in the questionnaire for that year (e.g., the subfield "polymer physics" was introduced in 1983), or that this subfield was included in the questionnaire for that year but no doctorates were reported.]

(1) This subfield was introduced in 1983 and deleted in 1991.

(2) This subfield was changed from "nuclear structure" to "nuclear" in 1983.

(3) This subfield was introduced in 1983.

(4) This subfield was deleted in 1982.

(5) This subfield was changed from "applied geology, geological engineering, and economic geology" to "applied geology" in 1983. "Applied geology" was deleted in 1991.

(6) "Environmental sciences, general" and "environmental sciences, other" were replaced by "environmental sciences" in 1983.

(7) "Structural geology" was discontinued in 1983, and "geology" was introduced.

(8) This subfield was changed from "geophysics, solid earth" to "geophysics and seismology" in 1983.

(9) "Marine sciences, other" was discontinued in 1983, and "marine sciences" was introduced.

(10) This subfield had been deleted in 1976, but was restored in 1983.

(11) "Earth science, general" and "earth science, other" were discontinued in 1983, and "geological sciences, general" and "geological sciences, other" were introduced.

(12) This subfield was introduced in 1988.

(13) This subfield was changed from "animal husbandry" to "animal breeding/genetics" in 1983.

(14) "Animal science and animal nutrition" was separated into "animal nutrition" and "animal sciences, other" in 1983. In 1988 "dairy science" and "poultry science" were introduced.

(15) "Fish and wildlife" was separated into two subfields in 1983. In 1988 "wildlife management" was discontinued, and "wildlife/range management" was introduced.

(16) This subfield was changed from "food science and technology" to "food sciences" in 1983. In 1988 "food sciences" was separated into "food distribution," "food engineering," and "food sciences, other."

(17) In 1988 "forestry science" was separated into "forestry biology," "forest engineering," "forest management," "wood science," "renewable natural resources," and "forestry and related sciences, other."

(18) "Phytopathology" was discontinued in 1983, and subfields "plant breeding and genetics," "plant pathology," and "plant sciences, other" were introduced.

(19) This subfield was introduced in 1988 and deleted in 1991.

(20) This subfield was changed from "soils and soil science" to "soil sciences" in 1983. In 1988 "soil sciences" was separated into "soil chemistry/microbiology" and "soil sciences, other."

(21) "Botany" was discontinued in 1983, and "botany, other" was introduced.

FOOTNOTES (continued)

(22) "Cytology" was discontinued in 1983, and "cell biology" was introduced.

(23) This subfield was changed from "embryology" to "developmental biology/embryology" in 1990.

(24) "Genetics" was separated into "plant genetics" and "human and animal genetics" in 1983.

(25) "Pathology" was separated into "plant pathology" and "human and animal pathology" in 1983.

(26) "Animal physiology" was discontinued in 1983, and "human and animal physiology" was introduced.

(27) "Microbiology/bacteriology" was separated into two subfields in 1983.

(28) This subfield was changed from "nutrition and dietetics" to "nutritional sciences" in 1983.

(29) "Zoology" was discontinued in 1983, and "zoology, other" was introduced.

(30) This subfield was introduced in 1980 as "criminology and criminal justice." In 1983 it was changed to "criminology."

(31) The subfield "history and philosophy of science" was introduced in 1971. The name was changed to "history of science" in 1983.

(32) "Political science" was discontinued in 1983, and "political science and government" was introduced.

(33) This subfield was changed from "urban and regional planning" to "urban studies" in 1983.

(34) This subfield was changed from "counseling and guidance" to "counseling" in 1983.

(35) This subfield was changed from "developmental and gerontological" to "developmental" in 1983.

(36) This subfield was changed from "industrial and personnel" to "industrial and organizational" in 1983.

(37) "Aerospace" was added to "aeronautical/astronautical engineering" in 1983.

(38) "Bioengineering" was added to "biomedical engineering" in 1983.

(39) "Electrical" and "electronics" were merged in 1983.

(40) This subfield was changed from "sanitary and environmental" to "environmental health" in 1983.

(41) This subfield was changed from "metallurgy and physical metallurgical" to "metallurgical" in 1983.

(42) This subfield was changed from "mining" to "mining and mineral" in 1983.

(43) This subfield was changed from "fuel technology and petroleum engineering" to "petroleum" in 1983.

(44) This subfield was changed from "systems design and systems science" to "systems" in 1983.

(45) Non-S&E doctorates awarded include those whose field of specialization is unknown.

SOURCE: National Science Foundation/SRS, Survey of Earned Doctorates

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91

Citizenship status, sex, race/ethnicity, and year	Major field																	
		Physical sciences			Earth/ atmos/ ocean		Comp' info sci	Agric & biol sci					Engineering(1)					
	Total S&E	Sub-total	Physics astr	Chemistry		Math		Sub-total	Agri sci	Biol sci	Soc sci	Psych	Sub-total	Chem	Elec	Mech	Non-S&E(2)	Total all fields
U.S. CITIZENS																		
TOTAL, MALE AND FEMALE																		
Total																		
1981	13,544	1,956	721	1,235	472	482	168	3,891	594	3,297	2,294	3,111	1,170	128	246	158	11,517	25,061
1982	13,292	1,991	706	1,285	528	458	143	3,964	647	3,317	2,163	2,876	1,169	136	241	198	11,099	24,391
1983	13,403	2,064	709	1,355	483	411	180	3,859	649	3,210	2,199	3,044	1,163	162	218	145	10,956	24,359
1984	13,250	2,071	739	1,332	474	407	178	3,910	625	3,285	2,036	2,935	1,239	167	255	163	10,777	24,027
1985	12,947	2,043	698	1,345	442	376	189	3,831	683	3,148	1,982	2,805	1,279	218	247	193	10,423	23,370
1986	12,869	2,014	694	1,320	422	366	202	3,703	579	3,124	2,013	2,766	1,383	219	291	209	10,212	23,081
1987	12,819	2,080	699	1,381	425	345	243	3,565	584	2,981	1,856	2,747	1,558	280	291	241	10,164	22,983
1988	13,217	2,100	723	1,377	511	342	284	3,670	539	3,131	1,862	2,667	1,781	335	359	256	10,071	23,288
1989	13,312	1,973	675	1,298	529	393	338	3,724	607	3,117	1,807	2,684	1,864	352	394	259	10,088	23,400
1990	14,010	2,149	751	1,398	535	375	348	3,822	630	3,192	1,919	2,909	1,953	307	438	299	10,876	24,886
1991	13,923	2,048	737	1,311	584	439	379	3,799	551	3,248	1,901	2,796	1,977	316	465	279	10,798	24,721
Native American																		
1981	26	1	-	1	-	1	-	7	1	6	4	9	4	-	-	2	59	85
1982	38	3	3	-	-	1	1	10	3	7	4	16	3	-	-	-	39	77
1983	27	6	3	3	2	-	1	5	1	4	4	9	-	-	-	-	54	81
1984	31	4	1	3	-	3	-	11	1	10	4	6	3	2	-	-	43	74
1985	41	3	1	2	1	-	-	17	4	13	9	10	1	-	1	-	55	96
1986	52	5	-	5	2	1	-	17	-	17	12	9	6	-	2	2	47	99
1987	52	7	1	6	-	-	3	13	2	11	6	16	7	1	3	1	63	115
1988	41	6	1	5	2	2	1	12	6	6	7	7	4	2	-	1	53	94
1989	52	10	5	5	6	-	2	9	2	7	7	11	7	1	-	-	42	94
1990	41	3	-	3	1	1	-	8	4	4	6	18	4	-	-	-	55	96
1991	55	10	1	9	3	-	1	14	4	10	8	13	6	1	2	1	73	128
Asian																		
1981	330	46	20	26	4	20	4	98	8	90	48	33	77	3	20	13	135	465
1982	327	56	21	35	12	11	2	104	8	96	45	25	72	12	20	9	125	452
1983	345	66	27	39	8	13	6	116	15	101	35	35	66	11	10	9	147	492
1984	384	77	27	50	8	9	12	110	7	103	41	32	95	10	23	18	128	512
1985	373	76	19	57	8	14	2	114	8	106	35	34	90	20	13	21	143	516
1986	397	75	19	56	6	14	12	136	12	124	42	32	80	17	16	10	133	530
1987	443	67	18	49	9	18	10	123	17	106	43	38	135	20	37	25	99	542
1988	451	67	19	48	8	17	20	110	9	101	51	37	141	26	37	22	163	614
1989	487	75	33	42	11	13	18	127	7	120	32	38	173	34	45	25	139	626
1990	484	86	32	54	4	11	10	127	11	116	45	44	157	22	44	27	156	640
1991	577	81	22	59	7	23	32	162	8	154	44	43	185	25	59	26	185	762

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
	Total S&E	Physical sciences			Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
		Sub-total	Phys& astr	Chem-istry				Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
U.S. CITIZENS (con't.)																		
TOTAL, MALE AND FEMALE																		
Black																		
1981	282	19	6	13	3	7	2	52	9	43	72	111	16	2	7	2	731	1,013
1982	285	21	11	10	2	6	1	48	5	43	86	112	9	-	1	3	762	1,047
1983	283	19	8	11	1	3	3	49	12	37	79	110	19	1	2	4	639	922
1984	299	28	10	18	2	3	2	55	10	45	82	115	12	2	1	2	654	953
1985	278	23	4	19	2	3	2	49	5	44	79	101	19	2	6	1	634	912
1986	254	20	7	13	-	5	-	47	7	40	66	102	14	1	2	3	569	823
1987	234	16	5	11	1	10	2	52	7	45	53	88	12	3	-	2	534	768
1988	260	28	11	17	2	2	1	44	8	36	65	99	19	4	6	-	554	814
1989	284	25	5	20	3	6	1	51	6	45	78	96	24	1	8	5	537	821
1990	284	19	5	14	3	4	1	45	9	36	73	111	28	4	6	5	613	897
1991	328	24	6	18	2	9	5	50	6	44	82	113	43	4	14	3	605	933
Hispanic																		
1981	198	26	6	20	6	4	-	42	8	34	49	59	12	1	2	1	266	464
1982	226	21	6	15	6	6	1	50	6	44	50	69	23	4	6	1	309	535
1983	237	24	5	19	9	4	-	41	2	39	57	84	18	4	3	-	302	539
1984	254	38	12	26	1	11	3	43	4	39	55	81	22	2	6	4	282	536
1985	244	26	12	14	4	7	5	59	10	49	63	64	16	2	1	3	317	561
1986	276	35	11	24	5	9	4	59	7	52	58	81	25	4	7	3	295	571
1987	305	48	8	40	3	9	4	64	12	52	61	92	24	7	4	4	313	618
1988	327	57	14	43	8	3	2	74	13	61	51	89	43	3	9	5	270	597
1989	310	52	12	40	6	8	4	71	12	59	48	87	34	4	10	3	272	582
1990	383	63	13	50	11	7	4	86	14	72	75	98	39	6	7	3	335	718
1991	395	52	15	37	12	6	10	85	7	78	74	109	47	10	10	8	313	708
White																		
1981	12,090	1,724	622	1,102	443	429	154	3,515	543	2,972	1,997	2,819	1,009	118	203	133	9,890	21,980
1982	12,034	1,827	636	1,191	498	419	134	3,632	611	3,021	1,902	2,607	1,015	113	201	177	9,646	21,680
1983	12,116	1,879	631	1,248	443	374	161	3,560	600	2,960	1,943	2,740	1,016	140	195	128	9,584	21,700
1984	11,921	1,854	665	1,189	449	366	155	3,590	593	2,997	1,793	2,652	1,062	143	214	135	9,429	21,350
1985	11,660	1,850	631	1,219	415	337	170	3,515	646	2,869	1,724	2,552	1,097	181	210	160	9,103	20,763
1986	11,616	1,817	635	1,182	398	326	176	3,383	543	2,840	1,778	2,509	1,229	195	260	181	9,012	20,628
1987	11,482	1,888	645	1,243	395	295	215	3,237	541	2,696	1,645	2,476	1,331	243	234	203	8,980	20,462
1988	11,876	1,881	646	1,235	480	308	253	3,371	493	2,878	1,649	2,404	1,530	293	296	225	8,906	20,782
1989	11,915	1,766	599	1,167	495	351	296	3,393	561	2,832	1,608	2,423	1,583	306	318	218	8,978	20,893
1990	12,556	1,920	671	1,249	506	346	325	3,493	582	2,911	1,691	2,589	1,686	270	372	261	9,600	22,156
1991	12,353	1,844	671	1,173	546	394	323	3,431	516	2,915	1,653	2,503	1,659	270	372	236	9,506	21,859

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
		Physical sciences			Earth/ atmos/ ocean		Comp/ info sci	Agric & biol sci					Engineering(1)					
	Total S&E	Sub-total	Phys& astr	Chem-istry		Math		Sub-total	Agri sci	Biol sci	Soc sci	Psych	Sub-total	Chem	Elec	Mech	Non-S&E(2)	Total all fields
U.S. CITIZENS (con't.)																		
TOTAL, MALE AND FEMALE																		
Unknown																		
1981	618	140	67	73	16	21	8	177	25	152	124	80	52	4	14	7	436	1,054
1982	382	63	29	34	10	15	4	120	14	106	76	47	47	7	13	8	218	600
1983	395	70	35	35	20	17	9	88	19	69	81	66	44	6	8	4	230	625
1984	361	70	24	46	14	15	6	101	10	91	61	49	45	8	11	4	241	602
1985	351	65	31	34	12	15	10	77	10	67	72	44	56	13	16	8	171	522
1986	274	62	22	40	11	11	10	61	10	51	57	33	29	2	4	10	156	430
1987	303	54	22	32	17	13	9	76	5	71	48	37	49	6	13	6	175	478
1988	262	61	32	29	11	10	7	59	10	49	39	31	44	7	11	3	125	387
1989	264	45	21	24	8	15	17	73	19	54	34	29	43	6	13	8	120	384
1990	262	58	30	28	10	6	8	63	10	53	29	49	39	5	9	3	117	379
1991	215	37	22	15	14	7	8	57	10	47	40	15	37	6	8	5	116	331

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
		Physical sciences			Earth/		Comp/	Agric & biol sci					Engineering(1)					
	Total S&E	Sub-total	Phys& astr	Chem-istry	atmos/ ocean	Math	info sci	Sub-total	Agri sci	Biol sci	Soc sci	Psych	Sub-total	Chem	Elec	Mech	Non-S&E(2)	Total all fields
U.S. CITIZENS (con't.)																		
MALE																		
Total																		
1981	10,046	1,732	676	1,056	425	402	148	2,859	506	2,353	1,617	1,746	1,117	120	238	154	6,314	16,360
1982	9,652	1,727	651	1,076	436	386	126	2,851	530	2,321	1,475	1,556	1,095	127	232	187	5,910	15,562
1983	9,457	1,779	658	1,121	402	335	153	2,688	549	2,139	1,444	1,576	1,080	149	212	139	5,663	15,120
1984	9,287	1,768	685	1,083	378	333	153	2,773	531	2,242	1,291	1,440	1,151	151	247	152	5,443	14,730
1985	9,018	1,720	636	1,084	354	306	165	2,679	563	2,116	1,238	1,396	1,160	194	232	178	5,205	14,223
1986	8,783	1,682	638	1,044	344	297	165	2,512	463	2,049	1,212	1,330	1,241	188	272	196	4,853	13,636
1987	8,718	1,719	634	1,085	342	280	193	2,372	468	1,904	1,144	1,259	1,409	239	278	231	4,857	13,575
1988	8,933	1,738	666	1,072	395	283	245	2,380	420	1,960	1,099	1,190	1,603	293	335	240	4,792	13,725
1989	8,751	1,572	616	956	414	300	266	2,378	451	1,927	1,060	1,146	1,615	295	371	240	4,646	13,397
1990	9,182	1,734	688	1,046	410	293	268	2,441	483	1,958	1,140	1,191	1,705	258	403	276	4,969	14,151
1991	8,970	1,648	666	982	441	351	298	2,414	427	1,987	1,064	1,044	1,710	270	433	246	4,915	13,885
Native American																		
1981	20	1	-	1	-	1	-	6	1	5	4	4	4	-	-	2	36	56
1982	27	3	3	-	-	1	1	6	2	4	3	10	3	-	-	-	17	44
1983	22	6	3	3	2	-	1	4	1	3	2	7	-	-	-	-	28	50
1984	26	4	1	3	-	3	-	8	1	7	3	5	3	2	-	-	28	54
1985	21	3	1	2	1	-	-	8	4	4	3	5	1	-	1	-	19	40
1986	33	3	-	3	1	-	-	11	-	11	9	4	5	-	2	2	25	58
1987	31	5	1	4	-	-	2	9	2	7	4	4	7	1	3	1	31	62
1988	28	5	-	5	1	2	1	8	4	4	4	3	4	2	-	1	24	52
1989	33	10	5	5	4	-	1	5	1	4	5	3	5	1	-	-	16	49
1990	24	3	-	3	-	1	-	7	4	3	3	6	4	-	-	-	28	52
1991	36	8	1	7	2	-	1	10	4	6	6	5	4	-	1	1	37	73
Asian																		
1981	246	41	19	22	3	14	3	65	5	60	33	16	71	2	19	13	69	315
1982	223	37	15	22	7	9	2	61	6	55	32	6	69	12	19	9	58	281
1983	235	50	23	27	4	12	3	67	9	58	17	19	63	11	10	8	77	312
1984	269	57	23	34	6	8	11	67	6	61	25	16	79	7	19	17	69	338
1985	260	53	16	37	7	12	2	74	7	67	18	18	76	15	11	20	69	329
1986	282	55	16	39	5	12	12	82	10	72	27	15	74	15	15	10	65	347
1987	320	52	16	36	8	14	6	75	14	61	27	14	124	18	35	25	49	369
1988	335	52	18	34	6	13	19	69	5	64	31	13	132	24	34	22	79	414
1989	365	62	28	34	9	12	14	77	4	73	21	20	150	28	41	24	76	441
1990	357	67	26	41	3	8	9	86	9	77	28	19	137	15	41	25	69	426
1991	395	62	17	45	4	18	25	94	6	88	21	12	159	19	56	23	74	469

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Total S&E	Physical sciences			Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
		Sub-total	Phys & astr	Chem-istry				Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
U.S. CITIZENS (con't.)																		
MALE																		
Black																		
1981	157	16	5	11	3	6	1	24	9	15	44	47	16	2	7	2	342	499
1982	159	16	10	6	2	4	1	24	4	20	54	49	9	-	1	3	324	483
1983	150	17	8	9	1	2	1	27	11	16	49	35	18	1	2	3	263	413
1984	156	26	10	16	1	2	1	28	8	20	46	41	11	2	1	2	271	427
1985	152	18	3	15	2	3	2	28	4	24	44	39	16	1	6	1	227	379
1986	124	16	6	10	-	2	-	25	4	21	35	36	10	-	2	2	199	323
1987	115	13	4	9	-	8	1	27	4	23	25	30	11	3	-	2	202	317
1988	143	21	10	11	2	2	1	22	4	18	35	45	15	3	4	-	172	315
1989	142	18	5	13	2	4	-	27	5	22	35	35	21	-	8	5	185	327
1990	150	13	5	8	1	3	1	24	8	16	43	42	23	3	5	5	200	350
1991	171	20	6	14	1	5	1	25	5	20	46	38	35	3	12	2	214	385
Hispanic																		
1981	140	22	6	16	6	3	-	31	8	23	36	30	12	1	2	1	135	275
1982	160	15	4	11	4	5	1	33	5	28	38	42	22	4	6	1	184	344
1983	140	11	5	6	9	2	-	22	2	20	40	41	15	3	3	-	148	288
1984	173	30	11	19	1	10	3	30	4	26	40	41	18	1	6	4	141	314
1985	148	20	10	10	4	5	3	35	7	28	40	25	16	2	1	3	152	300
1986	177	27	9	18	4	6	4	33	4	29	38	43	22	2	6	3	125	302
1987	179	33	6	27	3	7	4	41	8	33	39	31	21	6	4	4	153	332
1988	199	44	12	32	4	3	2	51	12	39	21	37	37	3	8	4	124	323
1989	180	37	12	25	4	4	1	53	9	44	26	27	28	2	9	2	129	309
1990	232	41	11	30	7	4	3	55	11	44	44	45	33	6	7	2	146	378
1991	233	42	13	29	11	3	9	50	6	44	35	46	37	6	10	6	125	358
White																		
1981	8,980	1,524	585	939	397	359	136	2,599	460	2,139	1,402	1,597	966	112	197	129	5,479	14,459
1982	8,777	1,598	591	1,007	415	355	117	2,632	501	2,131	1,290	1,424	946	104	193	166	5,213	13,990
1983	8,592	1,628	585	1,043	372	303	139	2,499	512	1,987	1,274	1,434	943	130	190	124	5,018	13,610
1984	8,368	1,588	618	970	359	297	132	2,559	503	2,056	1,134	1,302	997	131	210	125	4,803	13,171
1985	8,163	1,568	578	990	331	272	149	2,477	534	1,943	1,082	1,284	1,000	165	199	146	4,647	12,810
1986	7,955	1,528	587	941	323	266	139	2,315	435	1,880	1,065	1,215	1,104	170	243	169	4,352	12,307
1987	7,830	1,567	585	982	314	238	172	2,163	437	1,726	1,018	1,159	1,199	205	223	193	4,338	12,168
1988	8,019	1,559	595	964	374	253	215	2,185	387	1,798	980	1,078	1,375	255	279	210	4,324	12,343
1989	7,820	1,402	545	857	387	268	235	2,161	416	1,745	947	1,049	1,371	258	300	201	4,169	11,989
1990	8,211	1,558	616	942	391	272	248	2,217	441	1,776	999	1,056	1,470	229	341	242	4,468	12,679
1991	7,965	1,482	608	874	411	318	255	2,196	398	1,798	925	935	1,443	236	347	209	4,399	12,364

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
		Physical sciences			Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
	Total S&E	Sub-total	Phys& astr	Chem-istry				Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
U.S. CITIZENS (con't.)																		
MALE																		
Unknown																		
1981	503	128	61	67	16	19	8	134	23	111	98	52	48	3	13	7	253	756
1982	306	58	28	30	8	12	4	95	12	83	58	25	46	7	13	8	114	420
1983	318	67	34	33	14	16	9	69	14	55	62	40	41	4	7	4	129	447
1984	295	63	22	41	11	13	6	81	9	72	43	35	43	8	11	4	131	426
1985	274	58	28	30	9	14	9	57	7	50	51	25	51	11	14	8	91	365
1986	212	53	20	33	11	11	10	46	10	36	38	17	26	1	4	10	87	299
1987	243	49	22	27	17	13	8	57	3	54	31	21	47	6	13	6	84	327
1988	209	57	31	26	8	10	7	45	8	37	28	14	40	6	10	3	69	278
1989	211	43	21	22	8	12	15	55	16	39	26	12	40	6	13	8	71	282
1990	208	52	30	22	8	5	7	52	10	42	23	23	38	5	9	2	58	266
1991	170	34	21	13	12	7	7	39	8	31	31	8	32	6	7	5	66	236

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
	Total S&E	Physical sciences			Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
		Sub-total	Phys & astr	Chem-istry				Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
U.S. CITIZENS (con't.)																		
FEMALE																		
Total																		
1981	3,498	224	45	179	47	80	20	1,032	88	944	677	1,365	53	8	8	4	5,203	8,701
1982	3,640	264	55	209	92	72	17	1,113	117	996	688	1,320	74	9	9	11	5,189	8,829
1983	3,946	285	51	234	81	76	27	1,171	100	1,071	755	1,468	83	13	6	6	5,293	9,239
1984	3,963	303	54	249	96	74	25	1,137	94	1,043	745	1,495	88	16	8	11	5,334	9,297
1985	3,929	323	62	261	88	70	24	1,152	120	1,032	744	1,409	119	24	15	15	5,218	9,147
1986	4,086	332	56	276	78	69	37	1,191	116	1,075	801	1,436	142	31	19	13	5,359	9,445
1987	4,101	361	65	296	83	65	50	1,193	116	1,077	712	1,488	149	41	13	10	5,307	9,408
1988	4,284	362	57	305	116	59	39	1,290	119	1,171	763	1,477	178	42	24	16	5,279	9,563
1989	4,561	401	59	342	115	93	72	1,346	156	1,190	747	1,538	249	57	23	19	5,442	10,003
1990	4,828	415	63	352	125	82	80	1,381	147	1,234	779	1,718	248	49	35	23	5,907	10,735
1991	4,953	400	71	329	143	88	81	1,385	124	1,261	837	1,752	267	46	32	33	5,883	10,836
Native American																		
1981	6	-	-	-	-	-	-	1	-	1	-	5	-	-	-	-	23	29
1982	11	-	-	-	-	-	-	4	1	3	1	6	-	-	-	-	22	33
1983	5	-	-	-	-	-	-	1	-	1	2	2	-	-	-	-	26	31
1984	5	-	-	-	-	-	-	3	-	3	1	1	-	-	-	-	15	20
1985	20	-	-	-	-	-	-	9	-	9	6	5	-	-	-	-	36	56
1986	19	2	-	2	1	1	-	6	-	6	3	5	1	-	-	-	22	41
1987	21	2	-	2	-	-	1	4	-	4	2	12	-	-	-	-	32	53
1988	13	1	1	-	1	-	-	4	2	2	3	4	-	-	-	-	29	42
1989	19	-	-	-	2	-	1	4	1	3	2	8	2	-	-	-	26	45
1990	17	-	-	-	1	-	-	1	-	1	3	12	-	-	-	-	27	44
1991	19	2	-	2	1	-	-	4	-	4	2	8	2	1	1	-	36	55
Asian																		
1981	84	5	1	4	1	6	1	33	3	30	15	17	6	1	1	-	66	150
1982	104	19	6	13	5	2	-	43	2	41	13	19	3	-	1	-	67	171
1983	110	16	4	12	4	1	3	49	6	43	18	16	3	-	-	1	70	180
1984	115	20	4	16	2	1	1	43	1	42	16	16	16	3	4	1	59	174
1985	113	23	3	20	1	2	-	40	1	39	17	16	14	5	2	1	74	187
1986	115	20	3	17	1	2	-	54	2	52	15	17	6	2	1	-	68	183
1987	123	15	2	13	1	4	4	48	3	45	16	24	11	2	2	-	50	173
1988	116	15	1	14	2	4	1	41	4	37	20	24	9	2	3	-	84	200
1989	122	13	5	8	2	1	4	50	3	47	11	18	23	6	4	1	63	185
1990	127	19	6	13	1	3	1	41	2	39	17	25	20	7	3	2	87	214
1991	182	19	5	14	3	5	7	68	2	66	23	31	26	6	3	3	111	293

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
		Physical sciences			Earth/ atmos/ ocean		Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
	Total S&E	Sub-total	Phys & astr	Chem-istry		Math		Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
U.S. CITIZENS (con't.)																		
FEMALE																		
Black																		
1981	125	3	1	2	-	1	1	28	-	28	28	64	-	-	-	-	389	514
1982	126	5	1	4	-	2	-	24	1	23	32	63	-	-	-	-	438	564
1983	133	2	-	2	-	1	2	22	1	21	30	75	1	-	-	1	376	509
1984	143	2	-	2	1	1	1	27	2	25	36	74	1	-	-	-	383	526
1985	126	5	1	4	-	-	-	21	1	20	35	62	3	1	-	-	407	533
1986	130	4	1	3	-	3	-	22	3	19	31	66	4	1	-	1	370	500
1987	119	3	1	2	1	2	1	25	3	22	28	58	1	-	-	-	332	451
1988	117	7	1	6	-	-	-	22	4	18	30	54	4	1	2	-	382	499
1989	142	7	-	7	1	2	1	24	1	23	43	61	3	1	-	-	352	494
1990	134	6	-	6	2	1	-	21	1	20	30	69	5	1	1	-	413	547
1991	157	4	-	4	1	4	4	25	1	24	36	75	8	1	2	1	391	548
Hispanic																		
1981	58	4	-	4	-	1	-	11	-	11	13	29	-	-	-	-	131	189
1982	66	6	2	4	2	1	-	17	1	16	12	27	1	-	-	-	125	191
1983	97	13	-	13	-	2	-	19	-	19	17	43	3	1	-	-	154	251
1984	81	8	1	7	-	1	-	13	-	13	15	40	4	1	-	-	141	222
1985	96	6	2	4	-	2	2	24	3	21	23	39	-	-	-	-	165	261
1986	99	8	2	6	1	3	-	26	3	23	20	38	3	2	1	-	170	269
1987	126	15	2	13	-	2	-	23	4	19	22	61	3	1	-	-	160	286
1988	128	13	2	11	4	-	-	23	1	22	30	52	6	-	1	1	146	274
1989	130	15	-	15	2	4	3	18	3	15	22	60	6	2	1	1	143	273
1990	151	22	2	20	4	3	1	31	3	28	31	53	6	-	-	1	189	340
1991	162	10	2	8	1	3	1	35	1	34	39	63	10	4	-	2	188	350
White																		
1981	3,110	200	37	163	46	70	18	916	83	833	595	1,222	43	6	6	4	4,411	7,521
1982	3,257	229	45	184	83	64	17	1,000	110	890	612	1,183	69	9	8	11	4,433	7,690
1983	3,524	251	46	205	71	71	22	1,061	88	973	669	1,306	73	10	5	4	4,566	8,090
1984	3,553	266	47	219	90	69	23	1,031	90	941	659	1,350	65	12	4	10	4,626	8,179
1985	3,497	282	53	229	84	65	21	1,038	112	926	642	1,268	97	16	11	14	4,456	7,953
1986	3,661	289	48	241	75	60	37	1,068	108	960	713	1,294	125	25	17	12	4,660	8,321
1987	3,652	321	60	261	81	57	43	1,074	104	970	627	1,317	132	38	11	10	4,642	8,294
1988	3,857	322	51	271	106	55	38	1,186	106	1,080	669	1,326	155	38	17	15	4,582	8,439
1989	4,095	364	54	310	108	83	61	1,232	145	1,087	661	1,374	212	48	18	17	4,809	8,904
1990	4,345	362	55	307	115	74	77	1,276	141	1,135	692	1,533	216	41	31	19	5,132	9,477
1991	4,388	362	63	299	135	76	68	1,235	118	1,117	728	1,568	216	34	25	27	5,107	9,495

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
	Total S&E	Physical sciences			Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
		Sub-total	Phys& astr	Chem-istry				Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
U.S. CITIZENS (con't.)																		
FEMALE																		
Unknown																		
1981	115	12	6	6	-	2	-	43	2	41	26	28	4	1	1	-	183	298
1982	76	5	1	4	2	3	-	25	2	23	18	22	1	-	-	-	104	180
1983	77	3	1	2	6	1	-	19	5	14	19	26	3	2	1	-	101	178
1984	66	7	2	5	3	2	-	20	1	19	18	14	2	-	-	-	110	176
1985	77	7	3	4	3	1	1	20	3	17	21	19	5	2	2	-	80	157
1986	62	9	2	7	-	-	-	15	-	15	19	16	3	1	-	-	69	131
1987	60	5	-	5	-	-	1	19	2	17	17	16	2	-	-	-	91	151
1988	53	4	1	3	3	-	-	14	2	12	11	17	4	1	1	-	56	109
1989	53	2	-	2	-	3	2	18	3	15	8	17	3	-	-	-	49	102
1990	54	6	-	6	2	1	1	11	-	11	6	26	1	-	-	1	59	113
1991	45	3	1	2	2	-	1	18	2	16	9	7	5	-	1	-	50	95

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
	Total S&E	Physical sciences			Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
		Sub-total	Phys & astr	Chem-istry				Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
NON-U.S. CITIZENS, PERMANENT VISAS																		
TOTAL, MALE AND FEMALE																		
Total																		
1981	893	147	53	94	16	43	20	159	35	124	160	47	301	43	58	44	388	1,281
1982	854	119	35	84	29	41	12	140	23	117	170	47	296	37	62	65	374	1,228
1983	898	120	51	69	30	46	27	150	36	114	142	64	319	38	69	47	377	1,275
1984	835	119	36	83	25	36	17	149	35	114	164	51	274	32	59	39	389	1,224
1985	929	135	48	87	32	42	24	151	43	108	171	59	315	39	65	58	395	1,324
1986	987	133	40	93	24	36	47	165	48	117	174	65	343	51	70	58	445	1,432
1987	1,086	147	56	91	25	51	32	208	48	160	209	59	355	48	60	67	492	1,578
1988	1,128	136	62	74	31	44	42	263	71	192	185	61	366	44	90	71	495	1,623
1989	1,121	146	61	85	30	35	58	227	45	182	206	54	365	55	84	66	505	1,626
1990	1,186	167	69	98	23	47	55	246	57	189	188	73	387	42	89	68	509	1,695
1991	1,252	178	69	109	26	55	62	263	56	207	227	60	381	44	113	59	562	1,814
Native American																		
1981	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
1984	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1985	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1986	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1989	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1990	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1991	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
Asian																		
1981	491	103	36	67	10	20	12	83	17	66	47	8	208	39	38	30	117	608
1982	438	75	22	53	15	21	10	78	15	63	59	6	174	25	36	32	114	552
1983	433	70	26	44	18	21	14	81	18	63	39	9	181	21	48	25	118	551
1984	390	67	20	47	11	21	8	68	13	55	49	11	155	24	36	19	117	507
1985	435	74	19	55	13	19	15	61	16	45	52	10	191	28	33	37	118	553
1986	410	71	18	53	8	14	25	53	10	43	48	9	182	37	45	21	118	528
1987	478	76	17	59	9	23	16	85	21	64	68	9	192	29	30	36	147	625
1988	461	70	33	37	7	16	24	91	21	70	52	10	191	32	46	35	160	621
1989	492	80	26	54	12	11	34	95	16	79	56	17	187	33	39	41	143	635
1990	515	76	31	45	13	16	38	105	21	84	58	9	200	24	49	41	147	662
1991	574	86	27	59	10	34	33	116	15	101	66	13	216	18	65	34	155	729

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
		Physical sciences			Earth/ atmos/ ocean		Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
	Total S&E	Sub-total	Phys& astr	Chem-istry		Math		Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
NON-U.S. CITIZENS, PERMANENT VISAS (con't.)																		
TOTAL, MALE AND FEMALE																		
Black																		
1981	50	5	-	5	1	2	-	9	2	7	28	2	3	-	-	-	47	97
1982	51	5	-	5	1	-	-	8	2	6	23	3	11	1	3	-	45	96
1983	39	6	1	5	-	-	-	9	-	9	12	2	10	2	-	1	44	83
1984	58	6	1	5	1	1	1	13	8	5	27	6	3	-	2	-	44	102
1985	79	4	-	4	2	4	1	20	11	9	29	4	15	2	2	2	52	131
1986	64	5	1	4	1	1	1	17	9	8	22	7	10	2	2	-	62	126
1987	74	4	2	2	1	1	-	21	6	15	29	5	13	-	3	1	65	139
1988	86	5	1	4	1	2	1	24	12	12	37	4	12	2	-	1	66	152
1989	68	6	-	6	1	2	-	19	8	11	30	1	9	2	1	-	73	141
1990	80	11	1	10	-	-	-	20	6	14	33	4	12	3	1	-	69	149
1991	92	7	3	4	1	2	3	24	11	13	40	3	12	4	-	-	57	149
Hispanic																		
1981	40	4	2	2	-	1	-	14	7	7	10	7	4	-	-	2	22	62
1982	43	4	3	1	1	-	-	4	1	3	16	5	13	1	1	4	36	79
1983	45	2	-	2	2	3	-	8	4	4	9	10	11	2	1	2	24	69
1984	41	9	2	7	1	-	-	9	4	5	7	3	12	1	2	1	30	71
1985	46	4	1	3	2	5	1	12	2	10	11	5	6	-	3	-	27	73
1986	66	5	4	1	-	3	3	24	10	14	13	8	10	-	2	3	41	107
1987	49	8	4	4	2	2	-	13	3	10	11	3	10	4	1	1	42	91
1988	67	6	1	5	-	1	-	23	8	15	13	4	20	2	4	2	32	99
1989	69	7	4	3	3	3	-	19	6	13	17	6	14	4	3	-	43	112
1990	76	9	2	7	2	3	1	25	9	16	12	9	15	1	3	2	41	117
1991	79	11	4	7	4	3	1	23	8	15	17	8	12	1	3	1	56	135
White																		
1981	298	33	13	20	5	19	8	51	8	43	68	30	84	4	20	12	192	490
1982	296	32	9	23	12	18	2	46	5	41	70	31	85	10	17	25	167	463
1983	362	38	24	14	10	21	13	48	13	35	77	43	112	12	19	18	183	545
1984	325	34	12	22	12	14	8	56	9	47	75	31	95	7	17	19	189	514
1985	344	50	26	24	15	13	7	57	13	44	73	38	91	9	25	16	190	534
1986	398	41	15	26	15	17	17	62	14	48	83	38	125	10	20	29	198	596
1987	438	54	30	24	13	24	14	75	13	62	91	40	127	13	22	27	216	654
1988	450	46	24	22	20	24	12	113	25	88	70	41	124	6	37	28	224	674
1989	450	51	30	21	14	18	23	82	10	72	89	30	143	15	37	23	226	676
1990	474	66	32	34	8	26	14	85	19	66	76	49	150	14	34	25	232	706
1991	471	70	33	37	11	16	25	91	18	73	94	35	129	20	41	22	274	745

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
	Total S&E	Physical sciences			Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
		Sub-total	Phys& astr	Chem-istry				Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
NON-U.S. CITIZENS, PERMANENT VISAS (con't.)																		
TOTAL, MALE AND FEMALE																		
Unknown																		
1981	14	2	2	-	-	1	-	2	1	1	7	-	2	-	-	-	10	24
1982	26	3	1	2	-	2	-	4	-	4	2	2	13	-	5	4	12	38
1983	18	4	-	4	-	1	-	4	1	3	5	-	4	1	1	1	8	26
1984	21	3	1	2	-	-	-	3	1	2	6	-	9	-	2	-	9	30
1985	25	3	2	1	-	1	-	1	1	-	6	2	12	-	2	3	8	33
1986	49	11	2	9	-	1	1	9	5	4	8	3	16	2	1	5	26	75
1987	47	5	3	2	-	1	2	14	5	9	10	2	13	2	4	2	22	69
1988	64	9	3	6	3	1	5	12	5	7	13	2	19	2	3	5	13	77
1989	42	2	1	1	-	1	1	12	5	7	14	-	12	1	4	2	20	62
1990	41	5	3	2	-	2	2	11	2	9	9	2	10	-	2	-	20	61
1991	36	4	2	2	-	-	-	9	4	5	10	1	12	1	4	2	18	54

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
	Total S&E	Physical sciences			Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
		Sub-total	Phys& astr	Chem-istry				Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
NON-U.S. CITIZENS, PERMANENT VISAS (con't.)																		
MALE																		
Total																		
1981	721	119	45	74	15	37	16	104	31	73	123	21	286	42	56	44	252	973
1982	692	99	30	69	25	33	12	90	14	76	128	23	282	35	59	61	223	915
1983	716	99	45	54	23	36	24	94	31	63	100	29	311	36	68	47	237	953
1984	671	97	31	66	24	24	15	95	29	66	129	26	261	30	58	38	221	892
1985	744	112	42	70	28	30	24	99	37	62	124	29	298	37	64	55	255	999
1986	783	94	34	60	21	32	41	117	41	76	123	32	323	46	66	58	284	1,067
1987	828	110	50	60	18	39	28	131	38	93	154	18	330	40	59	66	289	1,117
1988	872	96	45	51	27	33	35	173	62	111	133	27	348	37	88	70	293	1,165
1989	848	111	49	62	24	27	46	133	37	96	140	28	339	47	79	66	291	1,139
1990	901	119	52	67	23	36	45	155	45	110	139	25	359	34	87	67	286	1,187
1991	905	136	59	77	17	36	51	155	47	108	145	20	345	36	110	56	291	1,196
Native American																		
1981	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1
1984	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1985	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1986	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1989	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1990	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1991	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asian																		
1981	408	84	32	52	9	16	11	51	15	36	36	4	197	38	36	30	91	499
1982	367	60	18	42	14	16	10	53	8	45	43	3	168	25	35	30	77	444
1983	354	58	25	33	14	16	13	45	15	30	26	4	178	21	47	25	77	431
1984	319	53	17	36	11	12	7	38	10	28	45	5	148	22	35	19	70	389
1985	360	56	14	42	13	15	15	39	12	27	33	5	184	27	32	37	77	437
1986	333	50	15	35	8	11	22	36	8	28	30	3	173	34	42	21	84	417
1987	371	55	14	41	7	16	14	49	17	32	47	2	181	26	29	36	84	455
1988	356	43	20	23	5	9	19	52	18	34	39	7	182	29	45	35	100	456
1989	374	57	18	39	10	9	28	50	13	37	36	8	176	31	36	41	85	459
1990	394	53	24	29	13	12	32	53	17	36	41	3	187	20	47	40	86	480
1991	393	58	20	38	7	21	25	51	10	41	34	2	195	16	63	34	86	479

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Total S&E	Major field: Physical sciences			Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
		Sub-total	Phys& astr	Chem-istry				Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
NON-U.S. CITIZENS, PERMANENT VISAS (con't.)																		
MALE																		
Black																		
1981	48	5	-	5	1	2	-	9	2	7	26	2	3	-	-	-	32	80
1982	47	5	-	5	1	-	-	6	2	4	22	2	11	1	3	-	34	81
1983	38	6	1	5	-	-	-	8	-	8	12	2	10	2	-	1	35	73
1984	49	6	1	5	1	1	1	11	7	4	22	4	3	-	2	-	32	81
1985	72	2	-	2	2	4	1	19	11	8	27	3	14	2	2	2	45	117
1986	56	5	1	4	1	1	1	14	9	5	18	6	10	2	2	-	50	106
1987	66	4	2	2	1	1	-	18	6	12	25	4	13	-	3	1	52	118
1988	74	4	1	3	1	2	1	18	11	7	35	1	12	2	-	1	52	126
1989	65	6	-	6	1	1	-	18	8	10	29	1	9	2	1	-	60	125
1990	71	10	1	9	-	-	-	19	6	13	30	1	11	3	1	-	57	128
1991	78	6	3	3	1	2	3	18	11	7	35	1	12	4	-	-	49	127
Hispanic																		
1981	31	4	2	2	-	1	-	12	7	5	6	4	4	-	-	2	16	47
1982	34	3	2	1	1	-	-	2	-	2	13	4	11	-	1	4	18	52
1983	28	1	-	1	2	3	-	5	3	2	5	2	10	2	1	2	17	45
1984	32	7	2	5	1	-	-	7	4	3	6	1	10	1	2	1	15	47
1985	31	3	1	2	1	2	1	9	1	8	6	3	6	-	3	-	19	50
1986	50	4	3	1	-	3	3	17	7	10	9	4	10	-	2	3	21	71
1987	34	6	4	2	1	2	-	8	3	5	8	1	8	2	1	1	16	50
1988	47	3	-	3	-	1	-	17	7	10	4	2	20	2	4	2	18	65
1989	47	4	3	1	2	3	-	13	6	7	10	3	12	2	3	-	22	69
1990	52	5	2	3	2	2	1	17	6	11	8	5	12	-	3	2	18	70
1991	64	10	4	6	3	2	1	18	6	12	13	5	12	1	3	1	25	89
White																		
1981	221	24	9	15	5	17	5	31	7	24	48	11	80	4	20	12	110	331
1982	224	28	9	19	9	16	2	26	4	22	49	14	80	9	16	23	85	309
1983	279	31	19	12	7	16	11	33	13	20	52	21	108	10	19	18	102	381
1984	251	28	10	18	11	11	7	36	7	29	51	16	91	7	17	18	99	350
1985	258	48	25	23	12	8	7	31	12	19	52	18	82	8	25	13	109	367
1986	301	24	13	11	12	16	14	43	12	31	59	19	114	8	19	29	109	410
1987	320	42	28	14	9	20	12	45	8	37	66	11	115	10	22	26	121	441
1988	338	38	21	17	18	20	10	75	21	54	45	16	116	2	36	27	113	451
1989	331	42	27	15	11	13	17	45	6	39	56	16	131	12	35	23	110	441
1990	356	49	23	26	8	21	11	59	14	45	52	16	140	11	34	25	114	470
1991	340	59	30	29	6	11	22	59	16	43	57	11	115	14	41	19	119	459

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
	Total S&E	Physical sciences			Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
		Sub-total	Phys & astr	Chem-istry				Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
NON-U.S. CITIZENS, PERMANENT VISAS (con't.)																		
MALE																		
Unknown																		
1981	13	2	2	-	-	1	-	1	-	1	7	-	2	-	-	-	3	16
1982	20	3	1	2	-	1	-	3	-	3	1	-	12	-	4	4	9	29
1983	16	3	-	3	-	1	-	3	-	3	5	-	4	1	1	1	6	22
1984	20	3	1	2	-	-	-	3	1	2	5	-	9	-	2	-	5	25
1985	23	3	2	1	-	1	-	1	1	-	6	-	12	-	2	3	5	28
1986	43	11	2	9	-	1	1	7	5	2	7	-	16	2	1	5	20	63
1987	37	3	2	1	-	-	2	11	4	7	8	-	13	2	4	2	16	53
1988	57	8	3	5	3	1	5	11	5	6	10	1	18	2	3	5	10	67
1989	31	2	1	1	-	1	1	7	4	3	9	-	11	-	4	2	14	45
1990	28	2	2	-	-	1	1	7	2	5	8	-	9	-	2	-	11	39
1991	30	3	2	1	-	-	-	9	4	5	6	1	11	1	3	2	12	42

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
	Total S&E	Physical sciences			Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
		Sub-total	Phys& astr	Chem-istry				Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
NON-U.S. CITIZENS, PERMANENT VISAS (con't.)																		
FEMALE																		
Total																		
1981	172	28	8	20	1	6	4	55	4	51	37	26	15	1	2	-	136	308
1982	162	20	5	15	4	8	-	50	9	41	42	24	14	2	3	4	151	313
1983	182	21	6	15	7	10	3	56	5	51	42	35	8	2	1	-	140	322
1984	164	22	5	17	1	12	2	54	6	48	35	25	13	2	1	1	168	332
1985	185	23	6	17	4	12	-	52	6	46	47	30	17	2	1	3	140	325
1986	204	39	6	33	3	4	6	48	7	41	51	33	20	5	4	-	161	365
1987	258	37	6	31	7	12	4	77	10	67	55	41	25	8	1	1	203	461
1988	256	40	17	23	4	11	7	90	9	81	52	34	18	7	2	1	202	458
1989	273	35	12	23	6	8	12	94	8	86	66	26	26	8	5	-	214	487
1990	285	48	17	31	-	11	10	91	12	79	49	48	28	8	2	1	223	508
1991	347	42	10	32	9	19	11	108	9	99	82	40	36	8	3	3	271	618
Native American																		
1981	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1982	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1983	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1984	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1985	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1986	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1987	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1988	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1989	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1990	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1991	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2
Asian																		
1981	83	19	4	15	1	4	1	32	2	30	11	4	11	1	2	-	26	109
1982	71	15	4	11	1	5	-	25	7	18	16	3	6	-	1	2	37	108
1983	79	12	1	11	4	5	1	36	3	33	13	5	3	-	1	-	41	120
1984	71	14	3	11	-	9	1	30	3	27	4	6	7	2	1	-	47	118
1985	75	18	5	13	-	4	-	22	4	18	19	5	7	1	1	-	41	116
1986	77	21	3	18	-	3	3	17	2	15	18	6	9	3	3	-	34	111
1987	107	21	3	18	2	7	2	36	4	32	21	7	11	3	1	-	63	170
1988	105	27	13	14	2	7	5	39	3	36	13	3	9	3	1	-	60	165
1989	118	23	8	15	2	2	6	45	3	42	20	9	11	2	3	-	58	176
1990	121	23	7	16	-	4	6	52	4	48	17	6	13	4	2	1	61	182
1991	181	28	7	21	3	13	8	65	5	60	32	11	21	2	2	-	69	250

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
		Physical sciences			Earth/ atmos/ ocean		Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
	Total S&E	Sub-total	Phys& astr	Chem-istry		Math		Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
NON-U.S. CITIZENS, PERMANENT VISAS (con't.)																		
FEMALE																		
Black																		
1981	2	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	15	17
1982	4	-	-	-	-	-	-	2	-	2	1	1	-	-	-	-	11	15
1983	1	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	9	10
1984	9	-	-	-	-	-	-	2	1	1	5	2	-	-	-	-	12	21
1985	7	2	-	2	-	-	-	1	-	1	2	1	1	-	-	-	7	14
1986	8	-	-	-	-	-	-	3	-	3	4	1	-	-	-	-	12	20
1987	8	-	-	-	-	-	-	3	-	3	4	1	-	-	-	-	13	21
1988	12	1	-	1	-	-	-	6	1	5	2	3	-	-	-	-	14	26
1989	3	-	-	-	-	1	-	1	-	1	1	-	-	-	-	-	13	16
1990	9	1	-	1	-	-	-	1	-	1	3	3	1	-	-	-	12	21
1991	14	1	-	1	-	-	-	6	-	6	5	2	-	-	-	-	8	22
Hispanic																		
1981	9	-	-	-	-	-	-	2	-	2	4	3	-	-	-	-	6	15
1982	9	1	1	-	-	-	-	2	1	1	3	1	2	1	-	-	18	27
1983	17	1	-	1	-	-	-	3	1	2	4	8	1	-	-	-	7	24
1984	9	2	-	2	-	-	-	2	-	2	1	2	2	-	-	-	15	24
1985	15	1	-	1	1	3	-	3	1	2	5	2	-	-	-	-	8	23
1986	16	1	1	-	-	-	-	7	3	4	4	4	-	-	-	-	20	36
1987	15	2	-	2	1	-	-	5	-	5	3	2	2	2	-	-	26	41
1988	20	3	1	2	-	-	-	6	1	5	9	2	-	-	-	-	14	34
1989	22	3	1	2	1	-	-	6	-	6	7	3	2	2	-	-	21	43
1990	24	4	-	4	-	1	-	8	3	5	4	4	3	1	-	-	23	47
1991	15	1	-	1	1	1	-	5	2	3	4	3	-	-	-	-	31	46
White																		
1981	77	9	4	5	-	2	3	20	1	19	20	19	4	-	-	-	82	159
1982	72	4	-	4	3	2	-	20	1	19	21	17	5	1	1	2	82	154
1983	83	7	5	2	3	5	2	15	-	15	25	22	4	2	-	-	81	164
1984	74	6	2	4	1	3	1	20	2	18	24	15	4	-	-	1	90	164
1985	86	2	1	1	3	5	-	26	1	25	21	20	9	1	-	3	81	167
1986	97	17	2	15	3	1	3	19	2	17	24	19	11	2	1	-	89	186
1987	118	12	2	10	4	4	2	30	5	25	25	29	12	3	-	1	95	213
1988	112	8	3	5	2	4	2	38	4	34	25	25	8	4	1	1	111	223
1989	119	9	3	6	3	5	6	37	4	33	33	14	12	3	2	-	116	235
1990	118	17	9	8	-	5	3	26	5	21	24	33	10	3	-	-	118	236
1991	131	11	3	8	5	5	3	32	2	30	37	24	14	6	-	3	155	286

See footnotes at end of table.

Table 3. Science and engineering (S&E) doctorates awarded, by citizenship status, sex, racial/ethnic group, and major field of recipients: 1981-91--continued

Citizenship status, sex, race/ethnicity, and year	Major field																	
		Physical sciences			Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(1)				Non-S&E(2)	Total all fields
	Total S&E	Sub-total	Phys& astr	Chem-istry				Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
NON-U.S. CITIZENS, PERMANENT VISAS (con't.)																		
FEMALE																		
Unknown																		
1981	1	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	7	8
1982	6	-	-	-	-	1	-	1	-	1	1	2	1	-	1	-	3	9
1983	2	1	-	1	-	-	-	1	1	-	-	-	-	-	-	-	2	4
1984	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	4	5
1985	2	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	3	5
1986	6	-	-	-	-	-	-	2	-	2	1	3	-	-	-	-	6	12
1987	10	2	1	1	-	1	-	3	1	2	2	2	-	-	-	-	6	16
1988	7	1	-	1	-	-	-	1	-	1	3	1	1	-	-	-	3	10
1989	11	-	-	-	-	-	-	5	1	4	5	-	1	1	-	-	6	17
1990	13	3	1	2	-	1	1	4	-	4	1	2	1	-	-	-	9	22
1991	6	1	-	1	-	-	-	-	-	-	4	-	1	-	1	-	6	12

(1) Subtotal includes doctorate recipients whose engineering fields are not separately shown.
(2) Non-S&E doctorate recipients include those whose field of specialization is unknown.

SOURCE: National Science Foundation/SRS, Survey of Earned Doctorates

Table 4. Science and engineering (S&E) doctorates awarded, by major field and citizenship status of recipients: 1981-91

Year	Number						Percentage distribution				
	Total(1)	Citiz known	United States	Foreign			Citiz known	United States	Foreign		
				Total	Perm visas	Temp visas			Total	Perm visas	Temp visas
TOTAL, S&E											
1981	17,996	17,399	13,544	3,855	893	2,962	100.0	77.8	22.2	5.1	17.0
1982	18,017	17,273	13,292	3,981	854	3,127	100.0	77.0	23.0	4.9	18.1
1983	18,393	17,701	13,403	4,298	898	3,400	100.0	75.7	24.3	5.1	19.2
1984	18,514	17,777	13,250	4,527	835	3,692	100.0	74.5	25.5	4.7	20.8
1985	18,712	17,904	12,947	4,957	929	4,028	100.0	72.3	27.7	5.2	22.5
1986	19,251	17,997	12,869	5,128	987	4,141	100.0	71.5	28.5	5.5	23.0
1987	19,706	18,355	12,819	5,536	1,086	4,450	100.0	69.8	30.2	5.9	24.2
1988	20,739	19,264	13,217	6,047	1,128	4,919	100.0	68.6	31.4	5.9	25.5
1989	21,530	19,811	13,312	6,499	1,121	5,378	100.0	67.2	32.8	5.7	27.1
1990	22,677	21,731	14,010	7,721	1,186	6,535	100.0	64.5	35.5	5.5	30.1
1991	23,748	22,427	13,923	8,504	1,252	7,252	100.0	62.1	37.9	5.6	32.3
TOTAL, SCIENCES											
1981	15,468	14,986	12,374	2,612	592	2,020	100.0	82.6	17.4	4.0	13.5
1982	15,371	14,778	12,123	2,655	558	2,097	100.0	82.0	18.0	3.8	14.2
1983	15,612	15,049	12,240	2,809	579	2,230	100.0	81.3	18.7	3.8	14.8
1984	15,601	14,995	12,011	2,984	561	2,423	100.0	80.1	19.9	3.7	16.2
1985	15,546	14,891	11,668	3,223	614	2,609	100.0	78.4	21.6	4.1	17.5
1986	15,875	14,899	11,486	3,413	644	2,769	100.0	77.1	22.9	4.3	18.6
1987	15,994	14,910	11,261	3,649	731	2,918	100.0	75.5	24.5	4.9	19.6
1988	16,551	15,396	11,436	3,960	762	3,198	100.0	74.3	25.7	4.9	20.8
1989	16,986	15,641	11,448	4,193	756	3,437	100.0	73.2	26.8	4.8	22.0
1990	17,784	17,118	12,057	5,061	799	4,262	100.0	70.4	29.6	4.7	24.9
1991	18,536	17,596	11,946	5,650	871	4,779	100.0	67.9	32.1	4.9	27.2
PHYSICAL SCIENCES											
1981	2,627	2,545	1,956	589	147	442	100.0	76.9	23.1	5.8	17.3
1982	2,694	2,616	1,991	625	119	506	100.0	76.1	23.9	4.5	19.3
1983	2,802	2,723	2,064	659	120	539	100.0	75.8	24.2	4.4	19.8
1984	2,845	2,754	2,071	683	119	564	100.0	75.2	24.8	4.3	20.5
1985	2,916	2,798	2,043	755	135	620	100.0	73.0	27.0	4.8	22.2
1986	3,090	2,905	2,014	891	133	758	100.0	69.3	30.7	4.6	26.1
1987	3,212	3,025	2,080	945	147	798	100.0	68.7	31.3	4.9	26.4
1988	3,317	3,101	2,100	1,001	136	865	100.0	67.7	32.3	4.4	27.9
1989	3,244	3,007	1,973	1,034	146	888	100.0	65.6	34.4	4.9	29.5
1990	3,492	3,381	2,149	1,232	167	1,065	100.0	63.6	36.4	4.9	31.5
1991	3,602	3,431	2,048	1,383	178	1,205	100.0	59.7	40.3	5.2	35.1

See footnotes at end of table.

Table 4. Science and engineering (S&E) doctorates awarded, by major field and citizenship status of recipients: 1981-91--continued

Year	Number						Percentage distribution				
				Foreign					Foreign		
	Total[1]	Citizenship unknown	United States	Total	Permanent visa	Temporary visa	Citizenship unknown	United States	Total	Permanent visa	Temporary visa
PHYSICAL SCIENCES (cont'd.)											
Physics/astronomy											
1981	1,015	977	721	256	53	203	100.0	73.8	26.2	5.4	20.8
1982	1,014	983	706	277	35	243	100.0	71.8	28.2	3.6	24.6
1983	1,043	1,016	709	307	51	256	100.0	69.8	30.2	5.0	25.2
1984	1,080	1,041	739	302	36	266	100.0	71.0	29.0	3.5	25.6
1985	1,080	1,036	698	338	48	290	100.0	67.4	32.6	4.6	28.0
1986	1,187	1,099	694	405	40	365	100.0	63.1	36.9	3.6	33.2
1987	1,237	1,154	699	455	56	399	100.0	60.6	39.4	4.9	34.6
1988	1,302	1,208	723	485	62	423	100.0	59.9	40.1	5.1	35.0
1989	1,274	1,163	675	488	61	427	100.0	58.0	42.0	5.2	36.7
1990	1,392	1,356	751	605	69	536	100.0	55.4	44.6	5.1	39.5
1991	1,408	1,352	737	615	69	546	100.0	54.5	45.5	5.1	40.4
Chemistry											
1981	1,612	1,568	1,235	333	94	239	100.0	78.8	21.2	6.0	15.2
1982	1,680	1,633	1,285	348	84	264	100.0	78.7	21.3	5.1	16.2
1983	1,759	1,707	1,355	352	69	283	100.0	79.4	20.6	4.0	16.6
1984	1,765	1,713	1,332	381	83	298	100.0	77.8	22.2	4.8	17.4
1985	1,836	1,762	1,345	417	87	330	100.0	76.3	23.7	4.9	18.7
1986	1,903	1,806	1,320	486	93	393	100.0	73.1	26.9	5.1	21.8
1987	1,976	1,871	1,387	490	91	399	100.0	73.8	26.2	4.9	21.3
1988	2,018	1,893	1,377	516	74	442	100.0	72.7	27.3	3.9	23.3
1989	1,970	1,844	1,298	546	85	461	100.0	70.4	29.6	4.6	25.0
1990	2,060	2,015	1,398	637	68	569	100.0	67.9	31.0	3.3	27.7
1991	2,194	2,079	1,417	708	100	608	100.0	64.6	32.3	4.6	27.7
EARTH, ATMOS. & OCEAN SCI											
1981	483	473	378	105	10	95	100.0	78.3	21.7	2.1	19.7
1982	507	497	391	106	16	90	100.0	77.1	20.9	3.2	17.8
1983	504	493	387	106	13	93	100.0	76.8	21.0	2.6	18.5
1984	519	508	394	114	14	100	100.0	75.9	22.0	2.7	19.3
1985	538	527	403	124	15	109	100.0	74.9	23.0	2.8	20.3
1986	548	536	403	133	15	118	100.0	73.5	24.3	2.7	21.5
1987	559	547	410	137	15	122	100.0	73.3	24.5	2.7	21.8
1988	570	558	414	144	15	129	100.0	72.6	25.3	2.6	22.6
1989	557	545	396	149	15	134	100.0	71.1	26.8	2.7	24.1
1990	581	569	410	159	15	144	100.0	70.6	27.4	2.6	24.8
1991	579	568	408	160	15	145	100.0	70.5	27.6	2.6	25.0

See footnotes at end of table.

Table 4. Science and engineering (S&E) doctorates awarded, by major field and citizenship status of recipients: 1981-91--continued

Year	Number						Percentage distribution				
				Foreign					Foreign		
	Total(1)	Citiz known	United States	Total	Perm visas	Temp visas	Citiz known	United States	Total	Perm visas	Temp visas
MATHEMATICS											
1981	728	711	482	229	43	186	100.0	67.8	32.2	6.0	26.2
1982	720	691	458	233	41	192	100.0	66.3	33.7	5.9	27.8
1983	701	666	411	255	46	209	100.0	61.7	38.3	6.9	31.4
1984	698	675	407	268	36	232	100.0	60.3	39.7	5.3	34.4
1985	688	656	376	280	42	238	100.0	57.3	42.7	6.4	36.3
1986	729	674	366	308	36	272	100.0	54.3	45.7	5.3	40.4
1987	740	698	345	353	51	302	100.0	49.4	50.6	7.3	43.3
1988	749	691	342	349	44	305	100.0	49.5	50.5	6.4	44.1
1989	859	774	393	381	35	346	100.0	50.8	49.2	4.5	44.7
1990	892	846	375	471	47	424	100.0	44.3	55.7	5.6	50.1
1991	1,040	974	439	535	55	480	100.0	45.1	54.9	5.6	49.3
COMPUTER/INFO SCIENCES											
1981	232	228	168	60	20	40	100.0	73.7	26.3	8.8	17.5
1982	220	214	143	71	12	59	100.0	66.8	33.2	5.6	27.6
1983	286	279	180	99	27	72	100.0	64.5	35.5	9.7	25.8
1984	295	284	178	106	17	89	100.0	62.7	37.3	6.0	31.3
1985	310	302	189	113	24	89	100.0	62.6	37.4	7.9	29.5
1986	399	372	202	170	47	123	100.0	54.3	45.7	12.6	33.1
1987	450	418	243	175	32	143	100.0	58.1	41.9	7.7	34.2
1988	515	502	284	218	42	176	100.0	56.6	43.4	8.4	35.1
1989	612	574	338	236	58	178	100.0	58.9	41.1	10.1	31.0
1990	705	674	348	326	55	271	100.0	51.6	48.4	8.2	40.2
1991	797	779	379	400	62	338	100.0	48.7	51.3	8.0	43.4
AGRIC & BIOL SCIENCES											
1981	4,786	4,663	3,891	772	159	613	100.0	83.4	16.6	3.4	13.1
1982	4,844	4,707	3,964	743	140	603	100.0	84.2	15.8	3.0	12.8
1983	4,756	4,638	3,859	779	150	629	100.0	83.2	16.8	3.2	13.6
1984	4,877	4,734	3,910	824	149	675	100.0	82.6	17.4	3.1	14.3
1985	4,904	4,761	3,831	930	151	779	100.0	80.5	19.5	3.2	16.4
1986	4,805	4,579	3,703	876	165	711	100.0	80.9	19.1	3.6	15.5
1987	4,815	4,554	3,565	989	208	781	100.0	78.3	21.7	4.6	17.1
1988	5,127	4,835	3,670	1,165	263	902	100.0	75.9	24.1	5.4	18.7
1989	5,203	4,915	3,724	1,191	227	964	100.0	75.8	24.2	4.6	19.6
1990	5,507	5,361	3,822	1,539	246	1,293	100.0	71.3	28.7	4.6	24.1
1991	5,714	5,513	3,799	1,714	263	1,451	100.0	68.9	31.1	4.8	26.3

[illegible] end of table.

Table 4. Science and engineering (S&E) doctorates awarded, by major field and citizenship status of recipients: 1981-91--continued

Year	Number						Percentage distribution				
				Foreign					Foreign		
	Total(1)	Citiz known	United States	Total	Perm visas	Temp visas	Citiz known	United States	Total	Perm visas	Temp visas
AGRIC & BIOL SCIENCES (con't.)											
Agricultural sciences											
1981	982	954	594	360	35	325	100.0	62.3	37.7	3.7	34.1
1982	951	930	647	283	23	260	100.0	69.6	30.4	2.5	28.0
1983	1,015	992	649	343	36	307	100.0	65.4	34.6	3.6	30.9
1984	997	974	625	349	35	314	100.0	64.2	35.8	3.6	32.2
1985	1,111	1,081	683	398	43	355	100.0	63.2	36.8	4.0	32.8
1986	998	947	579	368	48	320	100.0	61.1	38.9	5.1	33.8
1987	976	921	584	337	48	289	100.0	63.4	36.6	5.2	31.4
1988	1,015	955	539	416	71	345	100.0	56.4	43.6	7.4	36.1
1989	1,088	1,008	607	401	45	356	100.0	60.2	39.8	4.5	35.3
1990	1,176	1,126	630	496	57	439	100.0	56.0	44.0	5.1	39.0
1991	1,072	1,031	551	480	56	424	100.0	53.4	46.6	5.4	41.1
Biological sciences											
1981	3,804	3,709	3,297	412	124	288	100.0	88.9	11.1	3.3	7.8
1982	3,893	3,777	3,317	460	117	343	100.0	87.8	12.2	3.1	9.1
1983	3,741	3,646	3,210	436	114	322	100.0	88.0	12.0	3.1	8.8
1984	3,880	3,760	3,285	475	114	361	100.0	87.4	12.6	3.0	9.6
1985	3,793	3,680	3,148	532	108	424	100.0	85.5	14.5	2.9	11.5
1986	3,807	3,632	3,124	508	117	391	100.0	86.0	14.0	3.2	10.8
1987	3,839	3,633	2,981	652	160	492	100.0	82.1	17.9	4.4	13.5
1988	4,112	3,880	3,131	749	192	557	100.0	80.7	19.3	4.9	14.4
1989	4,115	3,907	3,117	790	182	608	100.0	79.8	20.2	4.7	15.6
1990	4,331	4,235	3,192	1,043	189	854	100.0	75.4	24.6	4.5	20.2
1991	4,642	4,482	3,248	1,234	207	1,027	100.0	72.5	27.5	4.6	22.9
SOCIAL SCIENCES											
1981	3,154	3,028	2,294	734	160	574	100.0	75.8	24.2	5.3	19.0
1982	3,077	2,924	2,163	761	170	591	100.0	74.0	26.0	5.8	20.2
1983	3,083	2,937	2,199	738	142	596	100.0	74.9	25.1	4.8	20.3
1984	3,015	2,869	2,036	833	164	669	100.0	71.0	29.0	5.7	23.3
1985	2,994	2,836	1,982	854	171	683	100.0	69.9	30.1	6.0	24.1
1986	3,139	2,905	2,013	892	174	718	100.0	69.3	30.7	6.0	24.7
1987	2,980	2,749	1,856	893	209	684	100.0	67.5	32.5	7.6	24.9
1988	3,051	2,776	1,862	914	185	729	100.0	67.1	32.9	6.7	26.3
1989	3,125	2,844	1,807	1,037	206	831	100.0	63.5	36.5	7.2	29.2
1990	3,150	3,024	1,919	1,105	188	917	100.0	63.5	36.5	6.2	30.3
1991	3,306	3,124	1,901	1,223	227	996	100.0	60.9	39.1	7.3	31.9

See footnotes at end of table.

Table 4. Science and engineering (S&E) doctorates awarded, by major field and citizenship status of recipients: 1981-91--continued

Year	Number						Percentage distribution				
				Foreign					Foreign		
	Total(1)	Citiz known	United States	Total	Perm visas	Temp visas	Citiz known	United States	Total	Perm visas	Temp visas
PSYCHOLOGY											
1981	3,358	3,238	3,111	127	47	80	100.0	96.1	3.9	1.5	2.5
1982	3,159	2,988	2,876	112	47	65	100.0	96.3	3.7	1.6	2.2
1983	3,347	3,187	3,044	143	64	79	100.0	95.5	4.5	2.0	2.5
1984	3,257	3,074	2,935	139	51	88	100.0	95.5	4.5	1.7	2.9
1985	3,117	2,945	2,805	140	59	81	100.0	95.2	4.8	2.0	2.8
1986	3,124	2,912	2,766	146	65	81	100.0	95.0	5.0	2.2	2.8
1987	3,169	2,891	2,747	144	59	85	100.0	95.0	5.0	2.0	2.9
1988	3,064	2,812	2,667	145	61	84	100.0	94.8	5.2	2.2	3.0
1989	3,203	2,844	2,684	160	54	106	100.0	94.4	5.6	1.9	3.7
1990	3,269	3,099	2,909	190	73	117	100.0	93.9	6.1	2.4	3.8
1991	3,240	2,977	2,796	181	60	121	100.0	93.9	6.1	2.0	4.1
TOTAL, ENGINEERING(2)											
1981	2,528	2,413	1,170	1,243	301	942	100.0	48.5	51.5	12.5	39.0
1982	2,646	2,495	1,169	1,326	296	1,030	100.0	46.9	53.1	11.9	41.3
1983	2,781	2,652	1,163	1,489	319	1,170	100.0	43.9	56.1	12.0	44.1
1984	2,913	2,782	1,239	1,543	274	1,269	100.0	44.5	55.5	9.8	45.6
1985	3,166	3,013	1,279	1,734	315	1,419	100.0	42.4	57.6	10.5	47.1
1986	3,376	3,098	1,383	1,715	343	1,372	100.0	44.6	55.4	11.1	44.3
1987	3,712	3,445	1,558	1,887	355	1,532	100.0	45.2	54.8	10.3	44.5
1988	4,188	3,868	1,781	2,087	366	1,721	100.0	46.0	54.0	9.5	44.5
1989	4,544	4,170	1,864	2,306	365	1,941	100.0	44.7	55.3	8.8	46.5
1990	4,893	4,613	1,953	2,660	387	2,273	100.0	42.3	57.7	8.4	49.3
1991	5,212	4,831	1,977	2,854	381	2,473	100.0	40.9	59.1	7.9	51.2
Chemical engineering											
1981	296	283	128	155	43	112	100.0	45.2	54.8	15.2	39.6
1982	306	287	136	151	37	114	100.0	47.4	52.6	12.9	39.7
1983	349	338	162	176	38	138	100.0	47.9	52.1	11.2	40.8
1984	361	345	167	178	32	146	100.0	48.4	51.6	9.3	42.3
1985	440	429	218	211	39	172	100.0	50.8	49.2	9.1	40.1
1986	476	445	219	226	51	175	100.0	49.2	50.8	11.5	39.3
1987	527	510	280	230	48	182	100.0	54.9	45.1	9.4	35.7
1988	624	587	335	252	44	208	100.0	57.1	42.9	7.5	35.4
1989	625	597	352	245	55	190	100.0	59.0	41.0	9.2	31.8
1990	561	547	307	240	42	198	100.0	56.1	43.9	7.7	36.2
1991	620	598	316	282	44	238	100.0	52.8	47.2	7.4	39.8

See footnotes at end of table.

Table 4. Science and engineering (S&E) doctorates awarded, by major field and citizenship status of recipients: 1981-91--continued

Year	Number						Percentage distribution				
				Foreign					Foreign		
	Total(1)	Citiz known	United States	Total	Perm visas	Temp visas	Citiz known	United States	Total	Perm visas	Temp visas
TOTAL ENGINEERING (con't.)											
Civil engineering											
1981	287	274	105	169	34	135	100.0	38.3	61.7	12.4	49.3
1982	308	295	110	185	27	158	100.0	37.3	62.7	9.2	53.6
1983	354	341	124	217	30	187	100.0	36.4	63.6	8.8	54.8
1984	351	331	124	207	40	167	100.0	37.5	62.5	12.1	50.5
1985	358	344	114	230	38	192	100.0	33.1	66.9	11.0	55.8
1986	387	356	122	234	45	189	100.0	34.3	65.7	12.6	53.1
1987	441	402	146	256	36	220	100.0	36.3	63.7	9.0	54.7
1988	489	462	168	294	44	250	100.0	36.4	63.6	9.5	54.1
1989	498	472	166	306	55	251	100.0	35.2	64.8	11.7	53.2
1990	505	477	156	321	59	262	100.0	32.7	67.3	12.4	54.9
1991	509	477	139	338	35	303	100.0	29.1	70.9	7.3	63.5
Electrical engineering											
1981	478	453	246	207	58	149	100.0	54.3	45.7	12.8	32.9
1982	544	510	241	269	62	207	100.0	47.3	52.7	12.2	40.6
1983	517	488	218	270	69	201	100.0	44.7	55.3	14.1	41.2
1984	593	562	255	307	59	248	100.0	45.4	54.6	10.5	44.1
1985	631	586	247	339	65	274	100.0	42.2	57.8	11.1	46.8
1986	706	636	291	345	70	275	100.0	45.8	54.2	11.0	43.2
1987	691	615	291	324	60	264	100.0	47.3	52.7	9.8	42.9
1988	886	803	359	444	90	354	100.0	44.7	55.3	11.2	44.1
1989	995	901	394	507	84	423	100.0	43.7	56.3	9.3	46.9
1990	1,110	1,044	438	606	89	517	100.0	42.0	58.0	8.5	49.5
1991	1,206	1,132	465	667	113	554	100.0	41.1	58.9	10.0	48.9
Materials science											
1981	113	108	55	53	18	35	100.0	50.9	49.1	16.7	32.4
1982	147	130	63	67	13	54	100.0	48.5	51.5	10.0	41.5
1983	157	143	69	74	15	59	100.0	48.3	51.7	10.5	41.3
1984	168	167	76	91	17	74	100.0	45.5	54.5	10.2	44.3
1985	188	181	89	92	13	79	100.0	49.2	50.8	7.2	43.6
1986	187	176	82	94	19	75	100.0	46.6	53.4	10.8	42.6
1987	238	226	108	118	22	96	100.0	47.8	52.2	9.7	42.5
1988	252	237	119	118	19	99	100.0	50.2	49.8	8.0	41.8
1989	257	234	119	115	10	105	100.0	50.9	49.1	4.3	44.9
1990	307	292	126	166	16	150	100.0	43.2	56.8	5.5	51.4
1991	362	341	152	189	25	164	100.0	44.6	55.4	7.3	48.1

See footnotes at end of table.

Table 4. Science and engineering (S&E) doctorates awarded, by major field and citizenship status of recipients: 1981-91--continued

Year	Number						Percentage distribution				
				Foreign					Foreign		
	Total(1)	Citiz known	United States	Total	Perm visas	Temp visas	Citiz known	United States	Total	Perm visas	Temp visas
TOTAL ENGINEERING (con't.)											
Mechanical engineering											
1981	360	346	158	188	44	144	100.0	45.7	54.3	12.7	41.6
1982	437	423	198	225	65	160	100.0	46.8	53.2	15.4	37.8
1983	379	365	145	220	47	173	100.0	39.7	60.3	12.9	47.4
1984	427	407	163	244	39	205	100.0	40.0	60.0	9.6	50.4
1985	513	490	193	297	58	239	100.0	39.4	60.6	11.8	48.8
1986	536	498	209	289	58	231	100.0	42.0	58.0	11.6	46.4
1987	657	611	241	370	67	303	100.0	39.4	60.6	11.0	49.6
1988	715	660	256	404	71	333	100.0	38.8	61.2	10.8	50.5
1989	760	683	259	424	66	358	100.0	37.9	62.1	9.7	52.4
1990	883	831	299	532	68	464	100.0	36.0	64.0	8.2	55.8
1991	874	795	279	516	59	457	100.0	35.1	64.9	7.4	57.5
TOTAL, NON-S&E(3)											
1981	13,361	12,883	11,517	1,366	388	978	100.0	89.4	10.6	3.0	7.6
1982	13,094	12,550	11,099	1,451	374	1,077	100.0	88.4	11.6	3.0	8.6
1983	12,889	12,432	10,956	1,476	377	1,099	100.0	88.1	11.9	3.0	8.8
1984	12,823	12,306	10,777	1,529	389	1,140	100.0	87.6	12.4	3.2	9.3
1985	12,585	12,018	10,423	1,595	395	1,200	100.0	86.7	13.3	3.3	10.0
1986	12,644	11,792	10,212	1,580	445	1,135	100.0	86.6	13.4	3.8	9.6
1987	12,657	11,816	10,164	1,652	492	1,160	100.0	86.0	14.0	4.2	9.8
1988	12,750	11,841	10,071	1,770	495	1,275	100.0	85.1	14.9	4.2	10.8
1989	12,788	11,862	10,088	1,774	505	1,269	100.0	85.0	15.0	4.3	10.7
1990	13,380	12,924	10,876	2,048	509	1,539	100.0	84.2	15.8	3.9	11.9
1991	13,703	12,960	10,798	2,162	562	1,600	100.0	83.3	16.7	4.3	12.3
TOTAL, ALL FIELDS											
1981	31,357	30,282	25,061	5,221	1,281	3,940	100.0	82.8	17.2	4.2	13.0
1982	31,111	29,823	24,391	5,432	1,228	4,204	100.0	81.8	18.2	4.1	14.1
1983	31,282	30,133	24,359	5,774	1,275	4,499	100.0	80.8	19.2	4.2	14.9
1984	31,337	30,083	24,027	6,056	1,224	4,832	100.0	79.9	20.1	4.1	16.1
1985	31,297	29,922	23,370	6,552	1,324	5,228	100.0	78.1	21.9	4.4	17.5
1986	31,895	29,789	23,081	6,708	1,432	5,276	100.0	77.5	22.5	4.8	17.7
1987	32,363	30,171	22,983	7,188	1,578	5,610	100.0	76.2	23.8	5.2	18.6
1988	33,489	31,105	23,288	7,817	1,623	6,194	100.0	74.9	25.1	5.2	19.9
1989	34,318	31,673	23,400	8,273	1,626	6,647	100.0	73.9	26.1	5.1	21.0
1990	36,057	34,655	24,886	9,769	1,695	8,074	100.0	71.8	28.2	4.9	23.3
1991	37,451	35,387	24,721	10,666	1,814	8,852	100.0	69.9	30.1	5.1	25.0

(1) Total includes doctorate recipients of unknown citizenship.
(2) Subtotal includes doctorate recipients whose engineering fields are not separately shown.
(3) Non-S&E doctorate recipients include those whose field of specialization is unknown.

SOURCE: National Science Foundation/SRS, Survey of Earned Doctorates

Table 5. Non-U.S. citizens awarded science and engineering doctorates, by country of citizenship and visa type: 1981-91

Country of citizenship	Year of doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TOTAL, NON-U.S. CITIZENS											
SCIENCES											
Total, foreign citizenship	2,612	2,655	2,809	2,984	3,223	3,413	3,649	3,960	4,193	5,061	5,650
Canada	141	130	156	151	130	153	152	175	182	211	225
Mexico & Central America	73	72	92	83	93	97	87	91	121	120	143
Mexico	54	57	67	57	77	77	65	65	92	78	105
Caribbean	23	17	13	27	25	27	17	26	24	29	48
South America	218	175	193	214	201	233	232	226	224	255	291
Argentina	21	19	26	31	21	31	19	32	37	54	48
Brazil	99	64	75	81	68	79	74	69	70	67	82
Chile	24	21	24	29	35	36	35	36	38	39	44
Colombia	16	23	20	21	18	20	20	37	22	32	37
Europe	302	304	334	357	380	411	471	518	511	591	744
Belgium	15	8	8	11	10	16	10	15	10	19	34
England	84	74	77	88	97	66	85	104	82	85	115
France	17	28	19	31	17	24	32	31	33	37	46
Germany	27	30	40	37	41	51	67	67	85	107	107
Greece	36	37	34	43	38	52	62	60	67	68	96
Italy	15	18	23	25	38	44	36	56	41	49	69
East Asia	524	645	710	766	887	978	1,165	1,348	1,567	2,328	2,755
Taiwan	226	303	327	342	356	356	389	386	427	535	509
China, Peoples Republic of	-	3	8	33	89	143	206	345	454	728	1,181
China, unspecified	-	1	-	2	3	-	6	4	6	104	104
Hong Kong	71	60	68	57	66	47	65	48	55	64	87
Japan	46	57	72	64	72	86	68	79	86	130	92
Korea	85	109	132	151	190	223	309	363	442	611	655
Thailand	60	67	61	72	71	82	75	72	60	90	70
West Asia	554	603	650	716	674	736	745	693	728	901	849
India	203	197	205	243	246	265	299	265	285	392	381
Iran	120	148	140	168	117	115	94	91	88	118	97
Iraq	23	22	36	20	35	23	33	28	16	13	13
Israel	61	57	64	56	44	55	47	38	49	55	59
Lebanon	11	13	11	13	15	17	16	21	26	10	16
Turkey	19	25	32	31	28	35	43	39	26	47	33
Pakistan	18	30	25	27	28	36	42	32	46	50	58
Australasia	118	125	136	128	119	127	111	131	140	148	160
Australia	32	42	42	46	35	28	37	37	39	42	26
Indonesia, Republic of	35	27	38	26	27	31	29	31	40	39	45
New Zealand	14	13	18	12	15	16	12	13	24	14	19
Philippines	37	43	38	42	40	52	31	49	36	52	70
Africa	279	293	301	313	364	330	298	311	304	349	324
Egypt	38	45	50	45	59	47	58	68	60	77	54
Nigeria	98	82	77	64	88	67	73	66	47	59	59
Country unknown	380	291	224	229	350	315	371	441	392	129	111

Table 5. Non-U.S. citizens awarded science and engineering doctorates, by country of citizenship and visa type: 1981-91--continued

Country of citizenship	Year of doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TOTAL, NON-U.S. CITIZENS (con't.)											
ENGINEERING											
Total, foreign citizenship	1,343	1,326	1,489	1,543	1,734	1,715	1,887	2,087	2,306	2,660	2,854
Canada	17	18	23	22	22	18	29	28	38	40	51
Mexico & Central America	24	17	34	22	27	25	27	33	33	36	26
Mexico	21	13	29	19	24	20	21	27	28	25	21
Caribbean	-	3	9	5	7	6	6	2	5	7	3
South America	74	65	76	62	53	63	79	69	73	84	81
Argentina	6	5	8	10	11	10	9	6	6	12	12
Brazil	36	29	26	27	15	17	38	25	30	31	32
Chile	10	7	11	2	6	8	10	9	9	11	8
Colombia	3	4	5	11	4	4	7	9	5	8	11
Europe	103	113	120	109	111	148	152	171	198	205	185
Belgium	5	7	7	6	9	4	6	6	5	12	9
England	16	16	10	12	6	12	9	11	14	14	10
France	8	12	14	17	11	13	16	22	18	27	19
Germany	8	6	3	2	7	10	7	11	17	15	7
Greece	28	23	32	35	30	49	61	58	70	57	62
Italy	2	5	7	10	7	8	10	7	15	14	12
East Asia	362	422	481	582	666	682	803	889	988	1,264	1,543
Taiwan	218	257	277	322	387	351	398	400	427	474	573
China, Peoples Republic of	-	-	5	27	48	55	84	133	156	289	415
China, unspecified	1	2	-	-	-	2	3	1	8	45	37
Hong Kong	29	32	30	30	28	27	22	33	38	30	28
Japan	31	31	31	38	25	28	15	24	19	17	28
Korea	50	63	104	115	133	175	238	257	308	359	412
Thailand	23	25	27	36	25	26	20	24	16	21	18
West Asia	372	412	491	464	514	470	477	532	578	737	725
India	176	160	178	194	212	204	204	255	252	313	338
Iran	74	99	138	119	116	100	88	81	110	139	114
Iraq	4	4	7	6	6	4	10	8	9	14	8
Israel	33	25	45	22	22	24	19	23	19	19	26
Lebanon	8	8	13	15	11	11	27	18	25	35	37
Turkey	30	43	36	41	56	49	43	42	52	58	61
Pakistan	8	13	13	10	18	23	17	20	15	26	32
Australasia	11	21	23	29	28	21	24	24	26	25	40
Australia	4	4	8	5	4	6	5	2	2	3	7
Indonesia, Republic of	4	7	9	11	15	9	13	11	12	14	17
New Zealand	-	6	-	4	4	1	2	4	3	2	2
Philippines	3	4	6	9	5	5	4	7	9	6	14
Africa	104	98	125	139	137	118	107	138	140	187	149
Egypt	41	38	43	45	48	53	40	47	49	82	55
Nigeria	31	16	29	30	29	15	16	21	11	23	18
Country unknown	176	157	107	109	169	164	183	201	227	75	51

Table 5. Non-U.S. citizens awarded science and engineering doctorates, by country of citizenship and visa type: 1981-91--continued

Country of citizenship	Year of doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
PERMANENT VISAS											
SCIENCES											
Total, foreign citizenship	592	558	579	561	614	644	731	762	756	799	871
Canada	30	29	40	32	27	46	37	45	46	46	57
Mexico & Central America	5	11	16	11	9	15	12	12	22	20	27
Mexico	4	5	9	2	7	10	7	10	13	12	20
Caribbean	9	7	6	13	15	13	5	14	8	12	18
South America	26	15	22	16	23	40	33	37	34	54	49
Argentina	3	2	7	2	2	6	3	8	4	9	10
Brazil	7	2	4	1	4	3	4	5	8	10	6
Chile	6	1	2	3	5	10	5	4	5	7	6
Colombia	1	2	2	3	4	4	5	9	5	10	10
Europe	75	78	113	88	105	103	118	142	129	147	173
Belgium	3	1	-	2	2	4	2	2	3	5	7
England	27	25	36	35	40	29	26	40	31	32	48
France	5	6	7	5	6	4	8	9	12	9	8
Germany	7	11	12	11	18	17	27	21	21	34	25
Greece	7	6	10	10	9	11	15	15	16	19	17
Italy	2	4	4	3	10	4	6	7	8	5	13
East Asia	104	118	136	116	135	127	145	138	159	193	236
Taiwan	64	66	73	67	70	66	74	65	75	78	71
China, Peoples Republic of	-	-	-	-	5	5	13	16	26	30	64
China, unspecified	-	-	-	1	1	-	-	1	1	4	12
Hong Kong	10	10	12	13	13	8	10	10	10	7	9
Japan	3	9	7	8	7	7	8	8	12	22	15
Korea	16	21	28	18	28	27	22	27	30	39	51
Thailand	3	4	8	7	2	7	12	5	4	2	7
West Asia	75	84	103	117	114	134	163	139	157	194	166
India	32	32	40	38	40	41	58	48	59	76	63
Iran	17	22	25	41	35	44	39	38	38	63	39
Iraq	1	-	2	1	3	2	7	5	1	2	3
Israel	10	8	13	14	7	10	16	8	17	7	14
Lebanon	3	-	3	1	4	5	5	3	7	5	6
Turkey	2	3	5	6	7	10	5	7	6	7	6
Pakistan	2	8	4	6	1	5	8	4	2	5	9
Australasia	11	13	12	23	15	18	21	23	16	20	28
Australia	2	7	8	13	6	10	10	10	8	12	7
Indonesia, Republic of	2	-	-	1	1	1	3	2	3	-	6
New Zealand	1	3	1	1	1	1	3	4	1	3	4
Philippines	6	3	3	7	7	6	4	7	4	5	11
Africa	22	26	23	42	57	43	57	64	62	69	75
Egypt	1	2	5	6	9	5	7	14	9	7	9
Nigeria	9	11	7	12	22	15	21	18	16	24	25
Country unknown	235	177	108	103	114	105	140	148	123	44	42

Table 5. Non-U.S. citizens awarded science and engineering doctorates, by country of citizenship and visa type: 1981-91--continued

Country of citizenship	Year of doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
PERMANENT VISAS (con't.)											
ENGINEERING											
Total, foreign citizenship	301	296	319	274	315	343	355	366	365	387	381
Canada	4	2	5	3	2	2	3	8	9	9	14
Mexico & Central America	-	3	2	6	3	3	4	7	3	7	3
Mexico	-	2	2	6	3	1	3	5	3	4	1
Caribbean	-	2	7	-	3	1	1	1	-	4	-
South America	5	8	11	6	3	8	11	12	7	12	12
Argentina	1	1	1	-	-	-	1	-	-	2	5
Brazil	-	2	3	1	-	2	5	-	1	2	2
Chile	-	2	1	-	1	1	2	1	1	-	-
Colombia	-	1	3	2	-	-	-	5	2	1	1
Europe	25	20	27	22	26	39	32	28	30	31	32
Belgium	-	-	2	1	1	2	-	2	-	1	1
England	6	5	4	5	3	3	4	5	5	5	2
France	1	-	4	3	1	2	3	2	2	6	4
Germany	2	-	-	-	1	5	2	1	3	4	-
Greece	9	5	7	6	12	13	15	6	9	5	11
Italy	2	1	1	1	1	1	4	2	3	-	3
East Asia	82	89	97	99	120	116	115	112	105	127	165
Taiwan	57	56	68	59	88	78	77	71	67	68	87
China, Peoples Republic of	-	-	-	2	1	2	7	10	8	18	23
China, unspecified	1	1	-	-	-	-	2	-	2	4	3
Hong Kong	2	8	6	10	4	6	9	5	5	5	7
Japan	3	2	4	2	1	4	2	2	1	1	5
Korea	12	15	17	20	19	19	14	22	22	30	36
Thailand	3	3	1	4	4	3	1	-	-	-	1
West Asia	59	58	103	82	91	93	98	105	122	149	114
India	35	25	35	29	34	29	29	36	35	41	42
Iran	11	13	42	32	37	33	40	39	55	61	41
Iraq	-	1	2	-	-	-	1	3	1	1	-
Israel	5	3	9	2	2	6	4	6	2	3	4
Lebanon	2	2	2	5	3	3	10	7	7	13	4
Turkey	3	7	5	9	5	11	7	8	5	10	5
Pakistan	1	3	4	3	5	4	4	1	3	2	2
Australasia	3	2	1	3	1	3	6	6	3	5	5
Australia	1	2	-	1	1	2	3	1	-	-	2
Indonesia, Republic of	1	-	1	1	-	-	2	3	2	3	3
New Zealand	-	-	-	1	-	-	1	2	-	1	-
Philippines	1	-	-	-	-	1	-	-	1	1	-
Africa	5	14	18	11	21	19	12	17	17	21	25
Egypt	4	8	6	6	6	7	2	4	4	7	4
Nigeria	1	3	5	3	8	5	5	7	3	5	9
Country unknown	118	98	48	42	45	59	73	70	69	22	11

Table 5. Non-U.S. citizens awarded science and engineering doctorates, by country of citizenship and visa type: 1981-91--continued

Country of citizenship	Year of doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TEMPORARY VISAS											
SCIENCES											
Total, foreign citizenship	2,020	2,097	2,230	2,423	2,609	2,769	2,918	3,198	3,437	4,262	4,779
Canada	111	101	116	119	103	113	115	130	136	165	168
Mexico & Central America	68	61	76	72	84	82	75	79	99	100	116
Mexico	50	52	58	55	70	67	58	55	79	66	85
Caribbean	14	10	7	14	10	10	12	12	16	17	30
South America	192	160	171	198	178	197	199	189	190	201	242
Argentina	18	17	19	29	19	24	16	24	33	45	38
Brazil	92	62	71	80	64	76	70	64	62	57	76
Chile	18	20	22	26	30	26	30	32	33	32	38
Colombia	15	21	18	18	14	16	15	28	17	22	27
Europe	227	226	221	269	275	308	353	376	382	444	571
Belgium	12	7	8	9	8	12	8	13	7	14	27
England	57	49	41	53	57	35	59	64	51	53	67
France	12	22	12	26	11	17	24	22	21	28	38
Germany	20	19	28	26	23	35	40	46	64	73	82
Greece	29	31	24	33	29	43	47	45	51	49	79
Italy	13	14	19	22	28	36	30	49	33	44	56
East Asia	420	527	574	650	752	851	1,020	1,210	1,408	2,135	2,519
Taiwan	162	237	254	275	286	290	315	321	352	457	438
China, Peoples Republic of	-	3	8	33	84	138	193	329	428	698	1,117
China, unspecified	-	1	-	1	2	-	6	3	5	100	92
Hong Kong	61	50	56	44	53	38	55	38	45	57	78
Japan	43	48	65	56	65	73	60	71	74	108	77
Korea	69	88	104	133	162	196	287	336	412	572	604
Thailand	57	63	53	65	69	75	63	67	56	88	63
West Asia	479	519	547	599	560	602	582	554	571	707	683
India	171	165	165	205	206	224	241	217	226	316	318
Iran	103	126	115	127	82	69	55	53	50	55	58
Iraq	22	22	34	19	32	21	26	23	15	11	10
Israel	51	49	51	42	37	45	31	30	32	48	45
Lebanon	8	13	8	12	11	12	11	18	19	5	10
Turkey	17	22	27	25	21	25	38	32	20	40	27
Pakistan	16	22	21	21	27	31	34	28	44	45	49
Australasia	107	112	124	105	104	109	90	108	124	128	132
Australia	30	35	34	33	29	18	27	27	31	30	19
Indonesia, Republic of	33	27	38	25	26	30	26	29	37	39	39
New Zealand	13	10	17	11	14	15	9	9	23	11	15
Philippines	31	40	35	35	33	46	27	42	32	47	59
Africa	257	267	278	271	307	287	241	247	242	280	249
Egypt	37	43	45	39	50	42	51	54	51	70	45
Nigeria	89	71	70	52	66	49	52	48	31	35	34
Country unknown	145	114	116	126	236	210	231	293	269	85	69

Table 5. Non-U.S. citizens awarded science and engineering doctorates, by country of citizenship and visa type: 1981-91--continued

Country of citizenship	Year of doctorate										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
TEMPORARY VISAS (con't.)											
ENGINEERING											
Total, foreign citizenship	942	1,030	1,170	1,269	1,419	1,372	1,532	1,721	1,941	2,273	2,473
Canada	13	16	18	19	20	16	26	20	29	31	37
Mexico & Central America	24	14	32	16	24	22	23	26	30	29	23
Mexico	21	11	27	13	21	19	18	22	25	21	20
Caribbean	-	1	2	5	4	5	5	1	5	3	3
South America	69	57	65	56	50	55	68	57	66	72	69
Argentina	5	4	7	10	11	10	8	6	6	10	7
Brazil	36	27	23	26	15	15	33	25	29	29	30
Chile	10	5	10	2	5	7	8	8	8	11	8
Colombia	3	3	2	9	4	4	7	4	3	7	10
Europe	78	93	93	87	85	109	120	143	168	174	153
Belgium	5	7	5	5	8	2	6	4	5	11	8
England	10	11	6	7	3	9	5	6	9	9	8
France	7	12	10	14	10	11	13	20	16	21	15
Germany	6	6	3	2	6	5	5	10	14	11	7
Greece	19	18	25	29	18	36	46	52	61	52	51
Italy	-	4	6	9	6	7	6	5	12	14	9
East Asia	280	333	384	483	546	566	688	777	883	1,137	1,378
Taiwan	161	201	209	263	299	273	321	329	360	406	486
China, Peoples Republic of	-	-	5	25	47	53	77	123	148	271	392
China, unspecified	-	1	-	-	-	2	1	1	6	41	34
Hong Kong	27	24	24	20	24	21	13	28	33	25	21
Japan	28	29	27	36	24	24	13	22	18	16	23
Korea	38	48	87	95	114	156	224	235	286	329	376
Thailand	20	22	26	32	21	23	19	24	16	21	17
West Asia	313	354	388	382	423	377	379	427	456	588	611
India	141	135	143	165	178	175	175	219	217	272	296
Iran	63	86	96	87	79	67	48	42	55	78	73
Iraq	4	3	5	6	6	4	9	5	8	13	8
Israel	28	22	36	20	20	18	15	17	17	16	22
Lebanon	6	6	11	10	8	8	17	11	18	22	33
Turkey	27	36	31	32	51	38	36	34	47	48	56
Pakistan	7	10	9	7	13	19	13	19	12	24	30
Australasia	8	19	22	26	27	18	18	18	23	20	35
Australia	3	2	8	4	3	4	2	1	2	3	5
Indonesia, Republic of	3	7	8	10	15	9	11	8	10	11	14
New Zealand	-	6	-	3	4	1	1	2	3	1	2
Philippines	2	4	6	9	5	4	4	7	8	5	14
Africa	99	84	107	128	116	99	95	121	123	166	124
Egypt	37	30	37	39	42	46	38	43	45	75	51
Nigeria	30	13	24	27	21	10	11	14	8	18	9
Country unknown	58	59	59	67	124	105	110	131	158	53	40

SOURCE: National Science Foundation/SRS, Survey of Earned Doctorates

Table 6. Institutions conferring science and engineering (S&E) doctorates, by major field: 1991

Institution(1)	Total S&E	Physical sciences: Sub-total	Phys& astr	Chem-istry	Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci: Sub-total	Agri sci	Biol sci	Soc sci	Psych	Engineering(2): Sub-total	Chem	Elec	Mech	Non-S&E(3)	Total all flds
California, Univ of-Berkeley	569	94	39	55	14	54	17	107	13	94	112	14	157	18	39	37	209	778
Illinois, U, Urbana-Champaign	527	98	47	51	11	17	33	132	49	83	58	29	149	12	56	19	211	738
Wisconsin, Univ of-Madison	481	67	34	33	16	26	18	154	48	106	80	26	94	15	18	18	225	706
Minnesota, Univ of-Minneapolis	473	52	16	36	9	29	19	133	58	75	87	58	86	19	19	19	231	704
Massachusetts Inst Technology	466	86	47	39	28	29	7	38	-	38	50	3	225	30	24	35	31	497
Stanford University/CA	443	60	34	26	28	13	27	48	2	46	50	18	199	10	61	47	113	556
Michigan, University of	441	62	25	37	13	17	14	76	8	68	62	37	160	11	24	20	218	659
Texas, University of-Austin	423	77	42	35	17	10	28	50	-	50	58	40	143	29	21	8	287	710
Cornell University/NY	415	61	41	20	6	15	11	119	41	78	82	12	109	5	25	22	85	500
California, Univ of-Los Angeles	391	63	37	26	20	24	23	76	-	76	82	32	71	4	20	16	181	572
Ohio State University	384	56	17	39	4	19	23	104	19	85	64	32	82	4	20	15	255	639
Pennsylvania State University	346	59	21	38	28	14	12	53	15	38	44	31	105	12	18	17	127	473
Purdue University/IN	341	51	9	42	7	15	13	74	18	56	38	15	128	20	42	16	89	430
Texas A&M University	340	45	6	39	22	5	5	118	65	53	25	19	101	14	19	18	105	445
Washington, University of	319	56	18	38	31	11	14	84	17	67	34	16	73	14	20	5	140	459
California, University of-Davis	317	44	8	36	9	8	6	182	21	161	20	2	46	3	4	9	30	347
Harvard University/MA	294	56	32	24	7	19	9	88	-	88	100	13	2	-	-	-	240	534
Maryland, University of	290	54	34	20	7	24	15	55	13	42	42	36	57	6	26	7	163	453
Florida, University of	288	43	9	34	4	5	6	83	34	49	38	27	82	9	27	12	80	368
Arizona, University of	286	64	35	29	27	10	7	84	27	57	29	13	52	7	11	7	98	384
Pennsylvania, University of	277	34	18	16	3	9	13	56	-	56	96	14	52	8	4	6	172	449
Michigan State University	252	41	14	27	2	10	3	93	39	54	45	30	28	1	9	9	138	390
Columbia University/NY	238	35	22	13	14	12	8	34	-	34	47	32	56	2	15	13	160	398
Iowa State University	237	69	16	53	6	14	7	64	28	36	25	8	44	2	3	21	60	297
Northwestern University/IL	230	20	7	13	6	10	8	42	-	42	27	27	90	6	13	16	86	316
CUNY-Grad Sch & Univ Ctr	229	43	15	28	1	11	9	37	-	37	51	52	25	7	11	3	97	326
VA Poly Inst & State Univ	229	17	4	13	9	12	3	53	30	23	21	10	104	4	13	31	107	336
NC State University-Raleigh	227	19	6	13	3	12	1	76	43	33	14	7	95	7	17	16	29	256
Colorado, Univ of-Boulder	223	49	26	23	18	16	10	27	-	27	29	14	60	8	16	6	75	298
Southern Calif, University of	216	26	5	21	1	1	12	25	-	25	33	40	78	5	34	2	206	422
Massachusetts, Univ of-Amherst	212	34	11	23	6	11	15	40	13	27	41	19	46	13	7	6	188	400
Yale University/CT	202	39	20	19	4	8	6	66	5	61	52	13	14	3	6	4	142	344
Rutgers University/NJ	201	17	4	13	8	12	3	66	19	47	27	10	58	9	10	9	103	304
Chicago, University of/IL	200	45	22	23	7	14	2	41	-	41	75	16	-	-	-	-	117	317
Johns Hopkins University/MD	199	24	15	9	6	10	2	75	-	75	35	7	40	5	8	3	86	285
NCarolina, U of-Chapel Hill	189	46	10	36	8	11	7	61	-	61	26	26	4	-	-	-	147	336
California, Univ of-San Diego	189	32	13	19	24	18	5	36	-	36	32	16	26	1	11	-	21	210
SUNY at Buffalo	184	30	5	25	1	8	4	38	-	38	25	29	49	10	8	11	88	272
SUNY at Stony Brook	182	45	21	24	8	18	2	52	-	52	25	16	16	-	2	7	64	246
Princeton University/NJ	179	33	23	10	15	10	11	19	-	19	42	7	42	12	14	4	65	244
Colorado State University	173	23	1	22	8	3	-	67	31	36	15	15	42	1	6	5	25	198
New York University	170	19	9	10	1	20	17	31	-	31	37	44	1	-	-	-	257	427
Virginia, University of	167	24	9	15	4	19	2	30	-	30	26	27	35	8	7	2	125	292
Georgia, University of	165	15	3	12	3	3	-	89	30	59	26	29	-	-	-	-	167	332
Connecticut, University of	160	24	8	16	1	12	5	43	-	43	34	19	22	3	3	1	68	228
Pittsburgh, University of	159	30	4	26	2	3	6	30	-	30	32	26	30	9	4	4	182	341
Iowa, University of	156	27	9	18	4	12	6	41	-	41	14	7	45	2	7	16	203	359
California Inst of Technology	154	49	32	17	14	9	6	22	-	22	4	-	50	11	11	6	-	154
Duke University/NC	153	21	7	14	4	11	8	45	2	43	26	8	30	-	11	6	51	204
Georgia Inst of Technology	149	19	11	8	5	1	12	6	-	6	-	6	100	8	30	17	4	153

See footnotes at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by major field: 1991--continued

Institution(1)	Total S&E	Physical sciences: Sub-total	Phys& astr	Chem-istry	Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci: Sub-total	Agri sci	Biol sci	Soc sci	Psych	Engineering(2): Sub-total	Chem	Elec	Mech	Non-S&E(3)	Total all flds
Indiana Univ-Bloomington	145	40	16	24	6	3	2	34	-	34	46	14	-	-	-	-	215	360
Illinois, Univ of-Chicago	145	22	9	13	2	5	6	41	-	41	20	11	38	3	8	17	55	200
Cincinnati, University of/OH	144	34	6	28	2	1	4	27	-	27	9	16	51	8	8	12	82	226
Utah, University of	144	28	5	23	8	6	7	19	-	19	18	12	46	3	4	8	55	199
Boston University/MA	143	20	15	5	2	7	3	51	-	51	29	24	7	-	1	-	112	255
Carnegie Mellon Univ/PA	143	16	10	6	-	9	22	8	-	8	12	6	70	9	21	3	32	175
Tennessee, Univ of-Knoxville	141	20	7	13	2	3	1	35	8	27	19	23	38	6	7	5	75	216
Arizona State University	141	27	12	15	8	3	6	11	-	11	22	23	41	3	15	7	85	226
Calif, Univ of-Santa Barbara	141	30	14	16	11	5	2	21	-	21	31	16	25	5	6	4	45	186
Case Western Reserve/OH	136	29	10	19	-	3	4	27	-	27	9	9	55	5	6	8	38	174
LA St Univ & A&M College	136	26	7	19	6	6	5	44	22	22	15	14	20	7	2	1	56	192
Rochester, Univ of/NY	134	38	20	18	3	8	6	30	-	30	17	14	18	5	10	-	60	194
Washington State University	132	8	5	3	6	4	2	49	21	28	24	16	23	5	4	4	40	172
Oregon State University	132	15	1	14	14	4	3	58	37	21	8	1	29	-	11	9	37	169
Rensselaer Poly Inst/NY	125	21	9	12	5	4	6	4	-	4	6	-	79	10	20	18	11	136
Missouri, Univ of-Columbia	123	12	6	6	3	5	-	39	19	20	19	31	14	3	3	4	89	212
South Carolina, Univ of	121	23	3	20	21	6	2	31	-	31	13	13	12	3	4	1	125	246
Kentucky, University of	120	9	2	7	2	6	-	48	19	29	25	14	16	-	7	3	62	182
Brown University/RI	117	22	11	11	10	16	11	23	-	23	22	4	9	2	2	2	56	173
Vanderbilt University/TN	116	14	7	7	-	5	4	32	-	32	8	30	23	2	7	3	39	155
Washington University/MO	115	19	9	10	6	9	3	35	-	35	14	8	21	3	5	1	23	138
Kansas, University of	114	15	2	13	2	1	3	32	-	32	12	33	16	2	-	2	108	222
Syracuse University/NY	112	15	7	8	1	3	6	11	-	11	24	12	40	8	17	1	83	195
Wayne State University/MI	103	16	-	16	-	5	3	27	-	27	7	29	16	2	3	2	99	202
Florida State University	101	10	3	7	8	6	7	16	-	16	33	19	2	2	-	-	156	257
California, Univ of-Irvine	101	22	10	12	-	1	16	19	-	19	14	7	22	-	14	4	26	127
Hawaii, University of	101	6	4	2	8	2	1	35	8	27	39	8	2	-	2	-	42	143
Delaware, University of	100	21	11	10	8	3	1	8	1	7	15	7	37	13	6	9	33	133
Oklahoma State University	100	10	3	7	1	-	2	22	10	12	15	24	26	6	4	9	106	206
Temple University/PA	97	11	8	3	-	9	1	20	-	20	16	40	-	-	-	-	155	252
Nebraska, Univ of-Lincoln	97	5	2	3	2	3	5	47	27	20	11	18	6	-	-	1	118	215
U S Internatl Univ/CA	94	-	-	-	-	-	-	-	-	-	-	94	-	-	-	-	61	155
George Washington Univ/DC	88	-	-	-	2	1	7	12	-	12	17	11	38	-	6	2	61	149
New Mexico, University of	88	19	10	9	4	5	2	17	-	17	8	16	17	-	3	4	63	151
Auburn University/AL	87	11	4	7	1	6	2	26	14	12	6	13	22	5	3	4	38	125
Houston, University of/TX	87	19	9	10	4	1	4	9	-	9	5	24	21	6	4	4	60	147
Rice University/TX	86	17	6	11	5	12	4	2	-	2	8	5	33	10	7	9	18	104
Oklahoma, University of	84	9	2	7	9	2	5	18	-	18	7	10	24	5	5	6	61	145
Rhode Island, University of	83	10	2	8	15	3	-	22	5	17	2	14	17	1	6	6	11	94
Lehigh University/PA	83	14	7	7	1	5	-	5	-	5	2	7	49	12	5	6	18	101
Notre Dame, University of/IN	83	25	9	16	-	8	-	10	-	10	8	7	25	5	9	5	18	101
Kansas State University	82	12	5	7	-	6	2	43	27	16	4	2	13	1	1	2	54	136
Oregon, University of	81	17	7	10	1	3	1	18	-	18	20	21	-	-	-	-	115	196
Texas Tech University	80	10	4	6	6	3	2	14	6	8	3	24	18	1	5	-	64	144
Calif, Univ of-Riverside	77	23	13	10	1	7	-	33	14	19	6	7	-	-	-	-	13	90
Illinois Inst Technology	76	5	3	2	-	1	19	3	-	3	-	16	32	6	12	2	5	81
Miami, University of/FL	73	7	3	4	7	2	-	21	-	21	5	21	10	-	2	4	39	112
Akron, University of/OH	71	30	2	28	-	-	-	5	-	5	8	14	14	1	-	3	29	100
VA Commonwealth University	70	12	1	11	-	-	2	38	-	38	2	16	-	-	-	-	23	93
Calif Sch Prof Psy-Alhambra	68	-	-	-	-	-	-	-	-	-	-	68	-	-	-	-	-	68

See footnotes at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by major field: 1991--continued

Institution(1)	Total S&E	Physical sciences: Sub-total	Phys & astr	Chem-istry	Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci: Sub-total	Agri sci	Biol sci	Soc sci	Psych	Engineering(2): Sub-total	Chem	Elec	Mech	Non-S&E(3)	Total all flds
West Virginia University	66	3	-	3	1	-	-	23	10	13	6	10	23	3	3	7	49	115
Missouri, Univ of-Rolla	63	13	6	7	1	-	3	-	-	-	-	-	46	3	6	8	-	63
Calif, Univ of-Santa Cruz	62	16	8	8	14	3	2	14	3	11	7	6	-	-	-	-	11	73
Brandeis University/MA	61	11	4	7	-	6	2	16	-	16	22	4	-	-	-	-	30	91
Emory University/GA	61	14	-	14	-	2	-	31	-	31	5	9	-	-	-	-	51	112
Polytechnic University/NY	60	15	1	14	-	4	7	-	-	-	-	-	34	4	17	1	-	60
Calif, Univ of-San Francisco	60	17	-	17	-	-	2	25	-	25	10	3	3	-	-	-	20	80
Tufts University/MA	59	13	4	9	-	1	-	21	-	21	13	5	6	4	1	-	7	66
SUNY at Albany	59	6	3	3	3	3	-	8	-	8	19	20	-	-	-	-	52	111
Wisconsin, Univ of-Milwaukee	59	5	3	2	1	5	-	3	-	3	20	11	14	-	4	3	28	87
Northeastern University/MA	58	13	6	7	-	6	-	7	-	7	11	3	18	3	6	5	7	65
Southern Illinois Univ	58	4	2	2	3	3	-	15	2	13	12	17	4	-	-	-	104	162
Clemson University/SC	58	12	-	12	1	2	-	11	5	6	4	-	28	2	5	3	15	73
Georgetown University/DC	56	5	1	4	-	-	-	21	-	21	29	1	-	-	-	-	17	73
Calif Sch Prof Psych-Alameda	56	-	-	-	-	-	-	-	-	-	-	56	-	-	-	-	-	56
Tulane University of LA	55	5	-	5	-	8	2	16	-	16	7	12	5	2	2	-	36	91
Arkansas, Univ of-Fayetteville	54	12	8	4	-	-	-	24	11	13	-	10	8	-	2	-	64	118
North Texas, University of	53	8	2	6	-	3	3	10	1	9	7	21	1	-	-	-	118	171
Calif Sch Prof Psych-San Diego	53	-	-	-	-	-	-	-	-	-	-	53	-	-	-	-	-	53
Brigham Young University/UT	52	12	2	10	-	-	-	8	3	5	6	20	6	4	1	-	42	94
Georgia State University	51	5	4	1	-	-	-	7	-	7	7	32	-	-	-	-	81	132
Kent State University/OH	50	6	5	1	2	4	-	8	-	8	5	24	1	-	-	-	64	114
Alabama, Univ of-Birmingham	50	3	3	-	-	-	2	30	-	30	-	11	4	-	-	-	45	95
Mississippi State University	50	1	-	1	-	-	1	29	22	7	6	3	10	-	5	-	54	104
Wyoming, University of	50	7	-	7	6	9	-	17	6	11	1	5	5	1	2	1	17	67
New Mexico State University	50	11	3	8	1	3	3	19	11	8	-	8	5	-	2	-	13	63
Utah State University	50	-	-	-	1	-	-	28	22	6	5	9	7	-	-	-	10	60
Drexel University/PA	49	4	-	4	7	1	-	3	-	3	-	-	34	2	12	12	6	55
Southern Methodist Univ/TX	49	-	-	-	6	2	7	1	-	1	5	-	28	-	14	5	-	49
Calif Sch Prof Psych-Fresno	49	-	-	-	-	-	-	-	-	-	-	49	-	-	-	-	-	49
Howard University/DC	47	7	2	5	-	-	-	8	-	8	17	10	5	-	3	2	20	67
Texas, Univ of-Arlington	47	8	3	5	-	4	2	1	-	1	3	2	27	-	14	4	21	68
Stevens Inst Technology/NJ	45	8	4	4	-	2	7	-	-	-	1	3	24	1	2	2	-	45
Loyola Univ of Chicago/IL	44	4	-	4	-	-	-	12	-	12	4	24	-	-	-	-	53	97
South Florida, University of	44	4	1	3	2	5	-	10	-	10	-	13	10	2	3	-	35	79
Southern Mississippi, Univ of	44	14	-	14	-	-	-	2	-	2	-	27	1	-	-	-	63	107
Texas, University of-Dallas	44	11	8	3	5	3	7	5	-	5	8	4	1	-	-	-	13	57
SUNY at Binghamton	43	6	-	6	1	2	2	3	-	3	15	10	4	-	-	-	24	67
St Louis University/MO	42	-	-	-	5	2	-	13	-	13	8	14	-	-	-	-	70	112
Vermont, University of	41	5	-	5	-	-	-	21	1	20	-	8	7	-	4	1	7	48
Hofstra University/NY	41	-	-	-	-	-	-	-	-	-	-	41	-	-	-	-	23	64
Catholic University of Amer/DC	40	9	4	5	-	-	-	2	-	2	6	16	7	-	2	2	58	98
Alabama, University of	40	10	3	7	1	2	-	4	-	4	2	9	12	-	1	7	104	144
Miami University/OH	39	8	-	8	3	-	-	13	-	13	-	15	-	-	-	-	27	66
Denver, University of/CO	39	2	2	-	-	-	-	1	-	1	18	18	-	-	-	-	42	81
Dartmouth College/NH	37	9	2	7	3	-	-	16	-	16	-	1	8	-	1	1	-	37
Boston College/MA	37	12	7	5	-	-	-	3	-	3	11	11	-	-	-	-	43	80
Mississippi, University of	37	10	1	9	-	1	-	1	-	1	3	18	4	1	-	1	68	105
New Sch Soc Rsch/NY	36	-	-	-	-	-	-	-	-	-	16	20	-	-	-	-	2	38
Clarkson University/NY	35	7	2	5	-	1	1	3	-	3	-	-	23	6	5	5	-	35

See footnotes at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by major field: 1991--continued

Institution(1)	Total S&E	Physical sciences			Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(2)				Non-S&E(3)	Total all flds
		Sub-total	Phys& astr	Chem-istry				Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
Fordham University/NY	34	-	-	-	-	-	-	1	-	1	11	22	-	-	-	-	77	111
Idaho, University of	34	4	-	4	4	-	-	16	11	5	-	-	10	4	1	-	26	60
Fielding Institute/CA	34	-	-	-	-	-	-	-	-	-	-	34	-	-	-	-	7	41
Fuller Theol Seminary/CA	33	-	-	-	-	-	-	-	-	-	3	30	-	-	-	-	11	44
Ohio University	32	6	4	2	-	1	-	10	-	10	-	10	5	1	4	-	71	103
Texas Univ Health Sci-Houston	32	1	1	-	-	-	-	31	-	31	-	-	-	-	-	-	24	56
Nevada, University of	32	6	1	5	9	-	-	6	-	6	-	8	3	-	2	-	3	35
Cornell Univ Med Coll/NY	31	-	-	-	-	-	-	31	-	31	-	-	-	-	-	-	-	31
Old Dominion University/VA	31	1	1	-	3	4	1	6	-	6	2	5	9	-	3	6	4	35
Colorado School of Mines	31	1	-	1	12	1	-	-	-	-	5	-	12	3	-	-	1	32
Yeshiva U-Einstein Coll Med/NY	30	-	-	-	-	-	-	30	-	30	-	-	-	-	-	-	-	30
Northern Illinois University	30	11	-	11	1	1	-	3	-	3	8	6	-	-	-	-	77	107
New Hampshire, University of	29	2	1	1	-	1	-	9	2	7	5	7	5	1	-	-	10	39
North Dakota State University	29	5	-	5	-	1	2	18	9	9	-	-	3	-	1	1	-	29
Texas U Southwestern Med Ctr	29	-	-	-	-	-	-	20	-	20	-	6	3	-	-	-	-	29
Maine, University of-Orono	28	5	2	3	-	-	-	10	3	7	-	7	6	2	-	-	4	32
Clark University/MA	28	8	2	6	-	-	-	3	-	3	10	7	-	-	-	-	3	31
Toledo, University of/OH	28	4	2	2	-	-	-	-	-	-	-	11	13	-	3	4	29	57
Baylor College of Medicine/TX	28	-	-	-	-	-	-	28	-	28	-	-	-	-	-	-	-	28
Claremont Graduate School/CA	28	-	-	-	-	2	1	2	-	2	9	14	-	-	-	-	43	71
Rockefeller University/NY	27	2	2	-	-	-	-	25	-	25	-	-	-	-	-	-	-	27
Michigan Tech University	27	10	5	5	1	-	-	2	-	2	-	-	14	-	1	5	-	27
Western Michigan University	27	-	-	-	-	9	-	1	-	1	4	13	-	-	-	-	32	59
American University/DC	27	4	1	3	-	2	-	-	-	-	14	7	-	-	-	-	17	44
Nova University/FL	27	-	-	-	-	-	15	-	-	-	-	12	-	-	-	-	201	228
Wright Institute, The-Berkley/CA	27	-	-	-	-	-	-	-	-	-	-	27	-	-	-	-	-	27
Massachusetts, Univ of-Lowell	26	16	8	8	-	-	-	4	-	4	-	-	6	-	-	1	9	35
Missouri, Univ of-Kansas City	26	3	-	3	-	1	-	3	-	3	-	19	-	-	-	-	24	50
Louisville, University of/KY	26	2	-	2	-	-	1	13	-	13	-	7	3	1	-	-	16	42
Memphis State University/TN	26	1	-	1	-	1	1	3	-	3	-	19	1	-	1	-	54	80
Texas Womans University	26	-	-	-	-	-	-	5	1	4	6	15	-	-	-	-	62	88
Marquette University/WI	25	7	-	7	-	1	-	4	-	4	-	4	9	-	2	2	36	61
St Johns University-Queens/NY	24	-	-	-	-	-	-	2	-	2	-	22	-	-	-	-	14	38
Bowling Green State Univ/OH	24	-	-	-	-	5	-	5	-	5	4	10	-	-	-	-	41	65
Maryland, Univ of, Sch Med	24	3	-	3	-	-	-	21	-	21	-	-	-	-	-	-	19	43
Maryland, Univ-Balt Cnty	24	-	-	-	-	2	3	6	-	6	4	7	2	1	1	-	3	27
Montana State University	24	12	5	7	1	-	-	6	-	6	-	-	5	1	2	1	10	34
SUNY Health Sci-Brooklyn	23	-	-	-	-	-	-	23	-	23	-	-	-	-	-	-	-	23
Ball State University/IN	23	-	-	-	-	-	-	-	-	-	4	19	-	-	-	-	41	64
Southwestern LA, Univ of	23	-	-	-	-	7	12	1	-	1	-	-	3	-	-	-	12	35
Adelphi University/NY	22	-	-	-	-	1	-	-	-	-	-	21	-	-	-	-	17	39
George Mason University/VA	22	-	-	-	-	-	6	1	-	1	8	7	-	-	-	-	13	35
Worcester Poly Inst/MA	21	2	2	-	-	-	-	2	-	2	-	-	17	3	5	2	-	21
Alabama, Univ of-Huntsville	21	5	5	-	-	-	3	-	-	-	-	-	13	-	2	3	-	21
SUNY Envr Sci Frstry	19	1	-	1	3	-	-	14	8	6	-	-	1	-	-	-	1	20
Montana, University of	19	-	-	-	-	-	-	8	3	5	2	9	-	-	-	-	3	22
Calif Inst Integrl Stds	19	-	-	-	-	-	-	-	-	-	-	19	-	-	-	-	-	19
Clark Atlanta University/GA	18	-	-	-	-	-	-	3	-	3	4	11	-	-	-	-	31	49
Texas Univ Med Br-Galveston	18	-	-	-	-	-	-	18	-	18	-	-	-	-	-	-	1	19
Fairleigh Dickinson Univ/NJ	17	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	17

See footnotes at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by major field: 1991--continued

Institution(1)	Total S&E	Physical sciences			Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci			Soc sci	Psych	Engineering(2)				Non-S&E(3)	Total all flds
		Sub-total	Phys& astr	Chem-istry				Sub-total	Agri sci	Biol sci			Sub-total	Chem	Elec	Mech		
Health Sci U-Chicago Med/IL	17	-	-	-	-	-	-	5	-	5	-	12	-	-	-	-	-	17
Med Univ South Carolina	17	3	-	3	-	-	-	14	-	14	-	-	-	-	-	-	1	18
Saybrook Institute/CA	17	-	-	-	-	-	-	-	-	-	-	17	-	-	-	-	-	17
Rutgers Univeristy-Newark/NJ	16	3	-	3	-	-	-	5	-	5	6	2	-	-	-	-	3	19
Depaul University/IL	16	-	-	-	-	-	-	-	-	-	-	16	-	-	-	-	1	17
Wake Forest University/NC	16	-	-	-	-	-	-	16	-	16	-	-	-	-	-	-	-	16
New Mex Inst Mining & Tech	16	2	1	1	7	-	1	-	-	-	-	-	6	-	-	-	-	16
Loma Linda University/CA	16	-	-	-	-	-	-	16	-	16	-	-	-	-	-	-	5	21
Alfred University/NY	15	-	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	15
Yeshiva University/NY	15	-	-	-	-	-	-	-	-	-	-	15	-	-	-	-	9	24
Walden University/MN	15	-	-	-	-	-	-	-	-	-	13	2	-	-	-	-	46	61
Albany Medical College/NY	14	-	-	-	-	-	-	14	-	14	-	-	-	-	-	-	-	14
Seton Hall University/NJ	14	7	-	7	-	-	-	-	-	-	-	7	-	-	-	-	11	25
Med Coll Ohio at Toledo	14	-	-	-	-	-	-	14	-	14	-	-	-	-	-	-	1	15
Indiana State University	14	-	-	-	-	-	-	4	-	4	-	10	-	-	-	-	12	26
Missouri, Univ of-St Louis	14	4	-	4	-	-	-	-	-	-	-	10	-	-	-	-	14	28
North Dakota, University of	14	1	-	1	-	-	-	3	-	3	-	10	-	-	-	-	20	34
Unfrm Svc Univ Hlth/MD	14	-	-	-	-	-	-	12	-	12	-	2	-	-	-	-	-	14
Tulsa, University of/OK	14	-	-	-	-	-	-	-	-	-	-	4	10	5	-	1	13	27
Oregon Graduate Institute	14	4	2	2	2	-	2	1	-	1	-	-	5	-	3	-	-	14
Pacfic Grad Psych/CA	14	-	-	-	-	-	-	-	-	-	-	14	-	-	-	-	-	14
Bryn Mawr College/PA	13	3	2	1	1	-	-	-	-	-	2	7	-	-	-	-	20	33
NC, Univ of-Greensboro	13	-	-	-	-	-	-	3	-	3	2	8	-	-	-	-	67	80
LA St Univ, S Med-New Orleans	13	-	-	-	-	-	-	13	-	13	-	-	-	-	-	-	5	18
Portland State University/OR	13	4	1	3	1	-	-	1	-	1	5	-	2	-	1	-	7	20
New York Medical College	12	-	-	-	-	-	-	12	-	12	-	-	-	-	-	-	-	12
Medical College of Wisconsin	12	1	1	-	-	-	-	11	-	11	-	-	-	-	-	-	-	12
South Dakota, University of	12	-	-	-	-	-	-	5	-	5	-	7	-	-	-	-	21	33
William & Mary, Coll/VA	12	6	6	-	5	-	-	1	-	1	-	-	-	-	-	-	26	38
Tennessee, Univ-Health Sci Ctr	12	1	-	1	-	-	-	11	-	11	-	-	-	-	-	-	-	12
New Orleans, University of/LA	12	7	-	7	-	-	-	-	-	-	2	3	-	-	-	-	11	23
Northern Arizona University	12	-	-	-	-	-	-	8	-	8	4	-	-	-	-	-	47	59
PR, Univ of-Rio Piedras	12	5	-	5	-	-	-	2	-	2	1	4	-	-	-	-	11	23
LIU-Brooklyn Campus/NY	11	-	-	-	1	-	-	-	-	-	-	10	-	-	-	-	-	11
Florida Inst Technology	11	-	-	-	1	-	-	1	-	1	-	2	7	-	4	1	5	16
New Jersey Inst Technology	10	-	-	-	-	-	-	-	-	-	-	-	10	4	2	3	-	10
Thomas Jefferson University/PA	10	-	-	-	-	-	-	10	-	10	-	-	-	-	-	-	-	10
Illinois State University-Normal	10	-	-	-	-	1	-	9	-	9	-	-	-	-	-	-	29	39
Detroit Mercy, Univ/MI	10	1	-	1	-	-	-	-	-	-	-	7	2	-	-	1	-	10
Wichita State University/KS	10	2	-	2	-	-	-	1	-	1	-	-	7	-	2	2	3	13
Medical College of Georgia	10	-	-	-	-	-	-	10	-	10	-	-	-	-	-	-	2	12
Idaho State University	10	-	-	-	-	1	-	6	-	6	3	-	-	-	-	-	6	16
Oregon Health Sci Univ	10	-	-	-	-	-	-	10	-	10	-	-	-	-	-	-	5	15
Rand Grad School/CA	10	-	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	10
Alaska, University of	10	2	2	-	6	-	-	2	1	1	-	-	-	-	-	-	-	10
Wesleyan University/CT	9	3	-	3	-	4	-	2	-	2	-	-	-	-	-	-	2	11
New Jersey Med Sch-Newark	9	-	-	-	-	-	-	9	-	9	-	-	-	-	-	-	-	9
Duquesne University/PA	9	-	-	-	-	-	-	1	-	1	-	8	-	-	-	-	9	18
Medical College of Pensylvania	9	-	-	-	-	-	-	9	-	9	-	-	-	-	-	-	-	9
Cleveland State University/OH	9	7	-	7	-	-	-	2	-	2	-	-	-	-	-	-	2	11

See footnotes at end of table.

Table 6. Institutions conferring science and engineering (S&E) doctorates, by major field: 1991--continued

Institution(1)	Total S&E	Major field: Physical sciences: Sub-total	Phys& astr	Chem-istry	Earth/ atmos/ ocean	Math	Comp/ info sci	Agric & biol sci: Sub-total	Agri sci	Biol sci	Soc sci	Psych	Engineering(2): Sub-total	Chem	Elec	Mech	Non-S&E(3)	Total all flds
Rush University/IL	9	-	-	-	-	-	-	9	-	9	-	-	-	-	-	-	14	23
Central Florida, U/FL	9	-	-	-	-	-	1	-	-	-	-	-	8	-	1	-	11	20
Texas Christian University	9	3	1	2	-	-	-	-	-	-	-	6	-	-	-	-	8	17
Wright State University/OH	8	-	-	-	-	-	-	8	-	8	-	-	-	-	-	-	-	8
Mayo Graduate School/MN	8	-	-	-	-	-	-	8	-	8	-	-	-	-	-	-	1	9
Mass, U Med S-Worcester	7	-	-	-	-	-	-	7	-	7	-	-	-	-	-	-	2	9
Oakland University/MI	7	2	2	-	-	-	-	2	-	2	-	-	3	-	-	-	2	9
South Dakota Sch Mine & Tech	7	-	-	-	1	-	-	-	-	-	-	-	6	-	-	-	-	7
South Dakota State University	7	-	-	-	-	-	-	7	6	1	-	-	-	-	-	-	-	7
East Carolina Univ Sch Med/NC	7	-	-	-	-	-	-	7	-	7	-	-	-	-	-	-	-	7
LSU, Sch Med-Shreveport	7	-	-	-	-	-	-	7	-	7	-	-	-	-	-	-	-	7
Sam Houston State Univ/TX	7	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	7
Northern Colorado, Univ of	7	-	-	-	-	4	-	1	-	1	-	2	-	-	-	-	36	43
Naval Postgrad School/CA	7	1	1	-	1	2	1	-	-	-	-	-	2	-	2	-	-	7
Air Force Inst Tech/OH	6	-	-	-	-	1	-	-	-	-	-	-	5	-	4	-	-	6
Dayton, University of/OH	6	-	-	-	-	-	-	1	-	1	-	-	5	-	2	-	-	6
East Tenn State University	6	-	-	-	-	-	-	6	-	6	-	-	-	-	-	-	5	11
Caribbean Ctr Adv Studies/PR	6	-	-	-	-	-	-	-	-	-	-	6	-	-	-	-	-	6
Florida Atlantic University	5	-	-	-	-	-	-	-	-	-	-	2	3	-	1	-	13	18
Middle Tennessee State University	5	2	-	2	-	-	-	-	-	-	3	-	-	-	-	-	11	16
Arkansas U-Med Sciences	5	-	-	-	-	-	-	5	-	5	-	-	-	-	-	-	-	5
Baylor University/TX	5	5	1	4	-	-	-	-	-	-	-	-	-	-	-	-	19	24
S F Austin State Univ/TX	5	-	-	-	-	-	-	5	5	-	-	-	-	-	-	-	-	5
Texas Univ Hlth Sci-San Antonio	5	-	-	-	-	-	-	5	-	5	-	-	-	-	-	-	-	5
SUNY Health Sci-Syracuse	4	-	-	-	-	-	-	4	-	4	-	-	-	-	-	-	-	4
Tennessee Tech University	4	-	-	-	-	-	-	-	-	-	-	-	4	-	-	3	-	4
George Peabody College/TN	4	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	62	66
Mississippi Univ-Medical Center	4	-	-	-	-	-	-	4	-	4	-	-	-	-	-	-	-	4
Biola University/CA	4	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	2	6
Hahnemann University/PA	3	-	-	-	-	-	-	2	-	2	-	1	-	-	-	-	1	4
Creighton University/NE	3	-	-	-	-	-	-	3	-	3	-	-	-	-	-	-	1	4
Meharry Medical College/TN	3	-	-	-	-	-	-	3	-	3	-	-	-	-	-	-	-	3
Louisiana Tech University	3	-	-	-	-	-	-	-	-	-	-	-	3	1	-	1	7	10
Northeast Louisiana University	3	1	-	1	-	-	-	2	-	2	-	-	-	-	-	-	3	6
East Texas State University	3	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	48	51
Pacific, University of/CA	3	1	-	1	-	-	-	2	-	2	-	-	-	-	-	-	12	15
Indiana University of PA	2	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	24	26
Philadelphia Coll Pharm & Sci/PA	2	1	-	1	-	-	-	1	-	1	-	-	-	-	-	-	6	8
Villanova University/PA	2	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Northern Iowa, University of	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	9	11
Institute of Paper Sci/GA	2	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	2
Florida International University	2	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	12	14
Southern Baptist Theol Sem/KY	2	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	38	40
South Alabama, Univ of	2	-	-	-	-	-	-	2	-	2	-	-	-	-	-	-	-	2
Dallas, University of/TX	2	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	1	3
Texas, University of-El Paso	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	2
Mass, University of-Boston	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1
Drew University/NJ	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	20	21
Annenbrg Res Inst/PA	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	4	5
Lamar University/TX	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	1

(1) The institutions are ranked according to number of S&E doctorate recipients (column 1). Degrees awarded by institutions jointly are included under the institution that officially conferred the degree.
(2) Subtotal includes doctorate recipients whose engineering fields are not separately shown.
(3) Non-S&E doctorate recipients include those whose field of specialization is unknown.

SOURCE: National Science Foundation/SRS, Survey of Earned Doctorates

Table 7. Science and engineering (S&E) doctorates awarded, by citizenship status, major field, and postgraduation plans of recipients: 1991

Citizenship status and major field	Total docts	Total with defin plans	% with defin plans	Postgraduation plans: Definite plans in the United States: Total	Pdoc study	Acad empl	Indus empl	Other empl	Unkn type	Defin plans abroad	Defin plans locn unkn
TOTAL(1)				Number							
Total, S&E	23,748	14,988	63.1	12,654	5,214	3,099	2,717	1,587	37	2,089	245
Total, sciences	18,536	12,133	65.5	10,400	4,753	2,637	1,640	1,340	30	1,541	192
Physical sciences	3,602	2,395	66.5	2,044	1,207	156	563	114	4	297	54
Physics/astronomy	1,408	911	64.7	730	496	68	109	56	1	159	22
Chemistry	2,194	1,484	67.6	1,314	711	88	454	58	3	138	32
Earth, atmos, & ocean sci	837	543	64.9	435	188	69	100	77	1	100	8
Mathematics	1,040	598	57.5	507	135	293	54	24	1	79	12
Computer/info sciences	797	500	62.7	420	59	178	157	26	-	75	5
Agricultural & biological sci	5,714	3,975	69.6	3,388	2,537	385	266	189	11	522	65
Agricultural sciences	1,072	653	60.9	436	164	109	99	63	1	202	15
Biological sciences	4,642	3,322	71.6	2,952	2,373	276	167	126	10	320	50
Social sciences	3,306	2,012	60.9	1,575	161	1,027	111	270	6	410	27
Psychology	3,240	2,110	65.1	2,031	466	529	389	640	7	58	21
Total, engineering(2)	5,212	2,855	54.8	2,254	461	462	1,077	247	7	548	53
Chemical	620	414	66.8	352	63	25	244	19	1	56	6
Civil	509	254	49.9	176	23	64	68	20	1	72	6
Electrical/electronics	1,206	647	53.6	533	92	114	278	47	2	100	14
Materials science	362	209	57.7	150	58	10	66	16	-	56	3
Mechanical	874	443	50.7	357	86	67	154	49	1	76	10
Total, non-S&E(3)	13,703	9,094	66.4	8,212	393	4,834	479	2,443	63	762	120
Total, all fields	37,451	24,082	64.3	20,866	5,607	7,933	3,196	4,030	100	2,851	365
U.S. CITIZENS											
Total, S&E	13,923	10,048	72.2	9,523	3,651	2,434	1,961	1,457	20	441	84
Total, sciences	11,946	8,649	72.4	8,191	3,466	2,131	1,335	1,240	19	386	72
Physical sciences	2,048	1,536	75.0	1,421	745	130	443	100	3	103	12
Physics/astronomy	737	518	70.3	456	274	57	77	47	1	58	4
Chemistry	1,311	1,018	77.7	965	471	73	366	53	2	45	8
Earth, atmos, & ocean sci	584	411	70.4	375	150	66	85	74	-	33	3
Mathematics	439	297	67.7	288	65	168	37	18	-	8	1
Computer/info sciences	379	259	68.3	235	25	114	76	20	-	23	1
Agricultural & biological sci	3,799	2,828	74.4	2,661	1,923	338	215	179	6	140	27
Agricultural sciences	551	365	66.2	338	107	99	72	60	-	22	5
Biological sciences	3,248	2,463	75.8	2,323	1,816	239	143	119	6	118	22
Social sciences	1,901	1,321	69.5	1,249	119	805	100	222	3	60	12
Psychology	2,796	1,997	71.4	1,962	439	510	379	627	7	19	16
Total, engineering(2)	1,977	1,399	70.8	1,332	185	303	626	217	1	55	12
Chemical	316	245	77.5	236	26	20	171	19	-	7	2
Civil	139	100	71.9	95	8	43	27	17	-	3	2
Electrical/electronics	465	299	64.3	290	33	75	143	39	-	7	2
Materials science	152	107	70.4	89	22	7	48	12	-	17	1
Mechanical	279	202	72.4	196	24	47	83	42	-	5	1
Total, non-S&E(3)	10,798	7,786	72.1	7,569	311	4,356	437	2,404	61	127	90
Total, all fields	24,721	17,834	72.1	17,092	3,962	6,790	2,398	3,861	81	568	174

See footnotes at end of table.

Table 7. Science and engineering (S&E) doctorates awarded, by citizenship status, major field, and postgraduation plans of recipients: 1991--continued

Citizenship status and major field	Total docts	Total with defin plans	% with defin plans	Postgraduation plans: Definite plans in the United States: Total	Pdoc study	Acad empl	Indus empl	Other empl	Unkn type	Defin plans abroad	Defin plans locn unkn
				Number							
NON-U.S. CITIZENS, PERMANENT VISAS											
Total, S&E	1,252	671	53.6	575	219	128	185	38	5	75	21
Total, sciences	871	491	56.4	418	195	104	86	30	3	57	16
Physical sciences	178	107	60.1	94	56	7	29	2	-	10	3
Physics/astronomy	69	44	63.8	37	27	2	7	1	-	6	1
Chemistry	109	63	57.8	57	29	5	22	1	-	4	2
Earth, atmos, & ocean sci	26	12	46.2	12	4	-	6	2	-	-	-
Mathematics	55	30	54.5	27	6	14	4	3	-	3	-
Computer/info sciences	62	35	56.5	33	5	6	21	1	-	2	-
Agricultural & biological sci	263	165	62.7	140	107	12	17	4	-	18	7
Agricultural sciences	56	24	42.9	18	6	3	8	1	-	5	1
Biological sciences	207	141	68.1	122	101	9	9	3	-	13	6
Social sciences	227	106	46.7	83	8	60	3	9	3	18	5
Psychology	60	36	60.0	29	9	5	6	9	-	6	1
Total, engineering(2)	381	180	47.2	157	24	24	99	8	2	18	5
Chemical	44	25	56.8	22	3	-	19	-	-	3	-
Civil	35	16	45.7	13	-	3	9	1	-	2	1
Electrical/electronics	113	58	51.3	49	5	7	33	3	1	6	3
Materials science	25	10	40.0	10	5	-	5	-	-	-	-
Mechanical	59	27	45.8	24	6	5	11	2	-	2	1
Total, non-S&E(3)	562	304	54.1	242	28	170	21	22	1	58	4
Total, all fields	1,814	975	53.7	817	247	298	206	60	6	133	25
NON-U.S. CITIZENS, TEMPORARY VISAS											
Total, S&E	7,252	4,241	58.5	2,551	1,341	536	570	92	12	1,550	140
Total, sciences	4,779	2,971	62.2	1,787	1,090	401	218	70	8	1,080	104
Physical sciences	1,205	747	62.0	527	405	19	90	12	1	181	39
Physics/astronomy	546	348	63.7	237	195	9	25	8	-	94	17
Chemistry	659	399	60.5	290	210	10	65	4	1	87	22
Earth, atmos, & ocean sci	188	119	63.3	48	34	3	9	1	1	66	5
Mathematics	480	270	56.3	191	64	110	13	3	1	68	11
Computer/info sciences	338	206	60.9	152	29	58	60	5	-	50	4
Agricultural & biological sci	1,451	973	67.1	586	506	35	34	6	5	356	31
Agricultural sciences	424	259	61.1	79	50	7	19	2	1	171	9
Biological sciences	1,027	714	69.5	507	456	28	15	4	4	185	22
Social sciences	996	580	58.2	243	34	162	8	39	-	327	10
Psychology	121	76	62.8	40	18	14	4	4	-	32	4
Total, engineering(2)	2,473	1,270	51.4	764	251	135	352	22	4	470	36
Chemical	238	143	60.1	94	34	5	54	-	1	45	4
Civil	303	136	44.9	68	15	18	32	2	1	65	3
Electrical/electronics	554	290	52.3	194	54	32	102	5	1	87	9
Materials science	164	92	56.1	51	31	3	13	4	-	39	2
Mechanical	457	213	46.6	136	55	15	60	5	1	69	8
Total, non-S&E(3)	1,600	986	61.6	396	54	304	21	16	1	564	26
Total, all fields	8,852	5,227	59.0	2,947	1,395	840	591	108	13	2,114	166

(1) Total includes doctorate recipients of unknown citizenship.
(2) Subtotal includes doctorate recipients whose engineering fields are not separately shown.
(3) Non-S&E doctorate recipients include those whose field of specialization is unknown.

SOURCE: National Science Foundation/SRS, Survey of Earned Doctorates

Table 8. Science and engineering (S&E) doctorates awarded, by citizenship status, major field, and postgraduation plans of recipients: 1991

Citizenship status and major field	Total with defin plans	Postgraduation plans: Definite plans in the United States: Total	Pdoc study	Acad empl	Indus empl	Other empl	Unkn type	Defin plans abroad	Defin plans locn unkn
TOTAL(1)	Percentage Distribution								
Total, S&E	100.0	84.4	34.8	20.7	18.1	10.6	0.2	13.9	1.6
Total, sciences	100.0	85.7	39.2	21.7	13.5	11.0	0.2	12.7	1.6
Physical sciences	100.0	85.3	50.4	6.5	23.5	4.8	0.2	12.4	2.3
Physics/astronomy	100.0	80.1	54.4	7.5	12.0	6.1	0.1	17.5	2.4
Chemistry	100.0	88.5	47.9	5.9	30.6	3.9	0.2	9.3	2.2
Earth, atmos, & ocean sci	100.0	80.1	34.6	12.7	18.4	14.2	0.2	18.4	1.5
Mathematics	100.0	84.8	22.6	49.0	9.0	4.0	0.2	13.2	2.0
Computer/info sciences	100.0	84.0	11.8	35.6	31.4	5.2	-	15.0	1.0
Agricultural & biological sci	100.0	85.2	63.8	9.7	6.7	4.8	0.3	13.1	1.6
Agricultural sciences	100.0	66.8	25.1	16.7	15.2	9.6	0.2	30.9	2.3
Biological sciences	100.0	88.9	71.4	8.3	5.0	3.8	0.3	9.6	1.5
Social sciences	100.0	78.3	8.0	51.0	5.5	13.4	0.3	20.4	1.3
Psychology	100.0	96.3	22.1	25.1	18.4	30.3	0.3	2.7	1.0
Total, engineering(2)	100.0	78.9	16.1	16.2	37.7	8.7	0.2	19.2	1.9
Chemical	100.0	85.0	15.2	6.0	58.9	4.6	0.2	13.5	1.4
Civil	100.0	69.3	9.1	25.2	26.8	7.9	0.4	28.3	2.4
Electrical/electronics	100.0	82.4	14.2	17.6	43.0	7.3	0.3	15.5	2.2
Materials science	100.0	71.8	27.8	4.8	31.6	7.7	-	26.8	1.4
Mechanical	100.0	80.6	19.4	15.1	34.8	11.1	0.2	17.2	2.3
Total, non-S&E(3)	100.0	90.3	4.3	53.2	5.3	26.9	0.7	8.4	1.3
Total, all fields	100.0	86.6	23.3	32.9	13.3	16.7	0.4	11.8	1.5
U.S. CITIZENS									
Total, S&E	100.0	94.8	36.3	24.2	19.5	14.5	0.2	4.4	0.8
Total, sciences	100.0	94.7	40.1	24.6	15.4	14.3	0.2	4.5	0.8
Physical sciences	100.0	92.5	48.5	8.5	28.8	6.5	0.2	6.7	0.8
Physics/astronomy	100.0	88.0	52.9	11.0	14.9	9.1	0.2	11.2	0.8
Chemistry	100.0	94.8	46.3	7.2	36.0	5.2	0.2	4.4	0.8
Earth, atmos, & ocean sci	100.0	91.2	36.5	16.1	20.7	18.0	-	8.0	0.7
Mathematics	100.0	97.0	21.9	56.6	12.5	6.1	-	2.7	0.3
Computer/info sciences	100.0	90.7	9.7	44.0	29.3	7.7	-	8.9	0.4
Agricultural & biological sci	100.0	94.1	68.0	12.0	7.6	6.3	0.2	5.0	1.0
Agricultural sciences	100.0	92.6	29.3	27.1	19.7	16.4	-	6.0	1.4
Biological sciences	100.0	94.3	73.7	9.7	5.8	4.8	0.2	4.8	0.9
Social sciences	100.0	94.5	9.0	60.9	7.6	16.8	0.2	4.5	0.9
Psychology	100.0	98.2	22.0	25.5	19.0	31.4	0.4	1.0	0.8
Total, engineering(2)	100.0	95.2	13.2	21.7	44.7	15.5	0.1	3.9	0.9
Chemical	100.0	96.3	10.6	8.2	69.8	7.8	-	2.9	0.8
Civil	100.0	95.0	8.0	43.0	27.0	17.0	-	3.0	2.0
Electrical/electronics	100.0	97.0	11.0	25.1	47.8	13.0	-	2.3	0.7
Materials science	100.0	83.2	20.6	6.5	44.9	11.2	-	15.9	0.9
Mechanical	100.0	97.0	11.9	23.3	41.1	20.8	-	2.5	0.5
Total, non-S&E(3)	100.0	97.2	4.0	55.9	5.6	30.9	0.8	1.6	1.2
Total, all fields	100.0	95.8	22.2	38.1	13.4	21.6	0.5	3.2	1.0

See footnotes at end of table.

Table 8. Science and engineering (S&E) doctorates awarded, by citizenship status, major field, and postgraduation plans of recipients: 1991--continued

Citizenship status and major field	Total with defin plans	Postgraduation plans: Definite plans in the United States: Total	Pdoc study	Acad empl	Indus empl	Other empl	Unkn type	Defin plans abroad	Defin plans locn unkn
NON-U.S. CITIZENS, PERMANENT VISAS				Percentage Distribution					
Total, S&E	100.0	85.7	32.6	19.1	27.6	5.7	0.7	11.2	3.1
Total, sciences	100.0	85.1	39.7	21.2	17.5	6.1	0.6	11.6	3.3
Physical sciences	100.0	87.9	52.3	6.5	27.1	1.9	-	9.3	2.8
Physics/astronomy	100.0	84.1	61.4	4.5	15.9	2.3	-	13.6	2.3
Chemistry	100.0	90.5	46.0	7.9	34.9	1.6	-	6.3	3.2
Earth, atmos, & ocean sci	100.0	100.0	33.3	-	50.0	16.7	-	-	-
Mathematics	100.0	90.0	20.0	46.7	13.3	10.0	-	10.0	-
Computer/info sciences	100.0	94.3	14.3	17.1	60.0	2.9	-	5.7	-
Agricultural & biological sci	100.0	84.8	64.8	7.3	10.3	2.4	-	10.9	4.2
Agricultural sciences	100.0	75.0	25.0	12.5	33.3	4.2	-	20.8	4.2
Biological sciences	100.0	86.5	71.6	6.4	6.4	2.1	-	9.2	4.3
Social sciences	100.0	78.3	7.5	56.6	2.8	8.5	2.8	17.0	4.7
Psychology	100.0	80.6	25.0	13.9	16.7	25.0	-	16.7	2.8
Total, engineering(2)	100.0	87.2	13.3	13.3	55.0	4.4	1.1	10.0	2.8
Chemical	100.0	88.0	12.0	-	76.0	-	-	12.0	-
Civil	100.0	81.3	-	18.8	56.3	6.3	-	12.5	6.3
Electrical/electronics	100.0	84.5	8.6	12.1	56.9	5.2	1.7	10.3	5.2
Materials science	100.0	100.0	50.0	-	50.0	-	-	-	-
Mechanical	100.0	88.9	22.2	18.5	40.7	7.4	-	7.4	3.7
Total, non-S&E(3)	100.0	79.6	9.2	55.9	6.9	7.2	0.3	19.1	1.3
Total, all fields	100.0	83.8	25.3	30.6	21.1	6.2	0.6	13.6	2.6
NON-U.S. CITIZENS, TEMPORARY VISAS									
Total, S&E	100.0	60.2	31.6	12.6	13.4	2.2	0.3	36.5	3.3
Total, sciences	100.0	60.1	36.7	13.5	7.3	2.4	0.3	36.4	3.5
Physical sciences	100.0	70.5	54.2	2.5	12.0	1.6	0.1	24.2	5.2
Physics/astronomy	100.0	68.1	56.0	2.6	7.2	2.3	-	27.0	4.9
Chemistry	100.0	72.7	52.6	2.5	16.3	1.0	0.3	21.8	5.5
Earth, atmos, & ocean sci	100.0	40.3	28.6	2.5	7.6	0.8	0.8	55.5	4.2
Mathematics	100.0	70.7	23.7	40.7	4.8	1.1	0.4	25.2	4.1
Computer/info sciences	100.0	73.8	14.1	28.2	29.1	2.4	-	24.3	1.9
Agricultural & biological sci	100.0	60.2	52.0	3.6	3.5	0.6	0.5	36.6	3.2
Agricultural sciences	100.0	30.5	19.3	2.7	7.3	0.8	0.4	66.0	3.5
Biological sciences	100.0	71.0	63.9	3.9	2.1	0.6	0.6	25.9	3.1
Social sciences	100.0	41.9	5.9	27.9	1.4	6.7	-	56.4	1.7
Psychology	100.0	52.6	23.7	18.4	5.3	5.3	-	42.1	5.3
Total, engineering(2)	100.0	60.2	19.8	10.6	27.7	1.7	0.3	37.0	2.8
Chemical	100.0	65.7	23.8	3.5	37.8	-	0.7	31.5	2.8
Civil	100.0	50.0	11.0	13.2	23.5	1.5	0.7	47.8	2.2
Electrical/electronics	100.0	66.9	18.6	11.0	35.2	1.7	0.3	30.0	3.1
Materials science	100.0	55.4	33.7	3.3	14.1	4.3	-	42.4	2.2
Mechanical	100.0	63.8	25.8	7.0	28.2	2.3	0.5	32.4	3.8
Total, non-S&E(3)	100.0	40.2	5.5	30.8	2.1	1.6	0.1	57.2	2.6
Total, all fields	100.0	56.4	26.7	16.1	11.3	2.1	0.2	40.4	3.2

(1) Total includes doctorate recipients of unknown citizenship.
(2) Subtotal includes doctorate recipients whose engineering fields are not separately shown.
(3) Non-S&E doctorate recipients include those whose field of specialization is unknown.

SOURCE: National Science Foundation/SRS, Survey of Earned Doctorates

STIS

The Science & Technology Information System at the National Science Foundation

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STIS is an electronic dissemination system that provides fast, easy access to National Science Foundation (NSF) publications. There is no cost to you except for possible long-distance phone charges. The service is available 24 hours a day, except for maintenance periods.

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Request: stis
Topic: index

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FTP to *stis.nsf.gov*. If you cannot connect, try *128.150.195.40*. Enter *anonymous* for the username, and your E-mail address for the password.

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If you are on the Internet: *telnet stis.nsf.gov*. If you cannot connect, try *telnet 128.150.195.40*. At the login prompt, enter *public*.

If you are dialing in with a modem: Choose 1200, 2400, or 9600 baud, 7-E-1. Dial 202-357-0359 or 202-357-0360. When connected, press Enter. At the login prompt, enter *public*.

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Send an E-mail message to **stisserv@nsf.gov** (Internet) or **stisserv@NSF** (BITNET). The Subject field will be ignored. Put the following in the message text:

Request: stis
Topic: stisdirm

You will receive instructions for this service.

For More Information

For additional assistance contact:

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stis-req@NSF (BITNET)
Phone: 202-357-7555 (voice mail)
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